RISC user

The magazine for users of Acorn RISC computers

MARCH 1993
Volume 6 Issue 4
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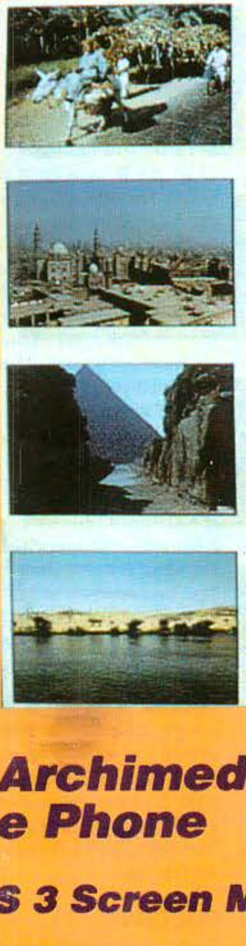
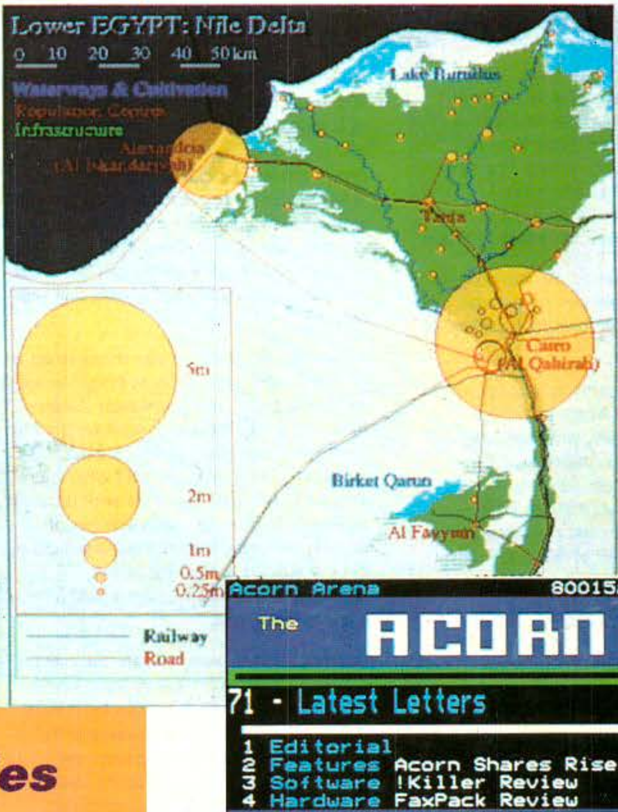
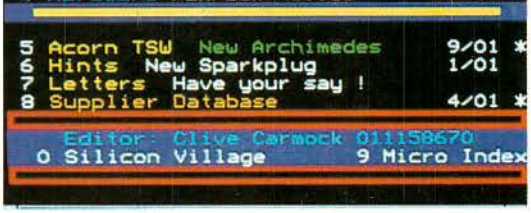
Revelation image Pro







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MARCH 1993
VOLUME 6 ISSUE 4

RISC user

THE MAGAZINE FOR USERS OF ACORN RISC COMPUTERS

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An editorial can sometimes seem a bit like a sermon, reflecting upon some topic and perhaps making a point. The text for this one is taken from a reader's letter which appears in this month's *Write-back* pages. This highlights the problems which many newcomers to home computing encounter when they unpack the box and switch on their new computer for the first time.

We all need to realise just how much of a hurdle a computer system can still be for many people. Some, of course, just seem to take to computing naturally, but the history of computing is so short that for many it is still an alien concept (maybe the next generation will be more computer literate). What can be so obvious to anyone who has used an Archimedes for a while can be confounding to others, and even those who might expect to know better can encounter difficulties, as I found to my own cost very recently.

To digress just briefly, I was trying to set up an A3000 with printer for someone to use with a particular word processor (under RISC OS 2). All went well until we tried to configure the printer, an Epson LX-400, but what printer driver to use? After more than an hour's trial and error with different drivers, and different configurations of drivers, we sorted it out to our satisfaction, but I wondered at the time how a newcomer to the Archimedes would have fared on their own.

So what are the issues, and are there any solutions? The reader whose letter I have included in Write-Back bought his A3010 system from Dixons. It does seem to me that such large chain store groups are unlikely to be able to provide the level of help and support that a more specialist dealer should be able to. But to the average (non-expert) consumer, the likes of Dixons provide a familiar and comforting environment, whereas a specialist dealer is often seen as daunting (and only for the 'expert'). I do not see any real remedy here, but more specialist shops surely have much to gain by promoting themselves in a way which will encourage the less expert into their premises. Once a customer has received good service, he/she is more likely to remain loyal to that outlet for future purchases.

Another area which causes difficulty is in the manuals supplied with any computer system. I am sure that Acorn has put a lot of effort into its manuals, and is as aware as anyone of the needs of new users. The difficulty is how to produce economically a single manual (or set of manuals) which cater adequately for all levels of user, providing a sufficiently comprehensive guide to all aspects of the system purchased. Of course, this is a problem not just for Acorn but for all software and hardware developers. Manuals have improved, but many could and probably should be still better.

There is one angle on to all of this which I believe has been ignored, certainly as far as the Archimedes range is concerned, and that is to make more use of the machine itself. The Apple Macintosh has for long been supplied with a Guided Tour on disc, which provides a lighthearted way for new users to learn many of the basic skills (and terminology) needed to use that system. I am sure that something similar could be done to advantage on the Archimedes range. Many people have an aversion to reading manuals, and just want to use their computer. Why not provide software which does just that.

It has been a disappointment to me over the years that whereas computers undoubtedly have the capability to help us in many ways, so often the hurdles to be overcome at best cause much anguish and wasted time, and at worst put people off computers for life.

Given the power and sophistication of present day computer systems and the software which runs on them, surely it is not beyond the capabilities of developers to make computer systems so much more accessible. Users have a right to expect it. Usability could be the computing trend for the nineties.

GOODBYE

With this issue we bid farewell to our Technical Editor, Mark Moxon, who has been lured away to the bright lights of London, or at least Camden, where he joins BBC Acorn User. Mark's efforts on RISC User have been much appreciated - we wish him well for the future.
M.W.

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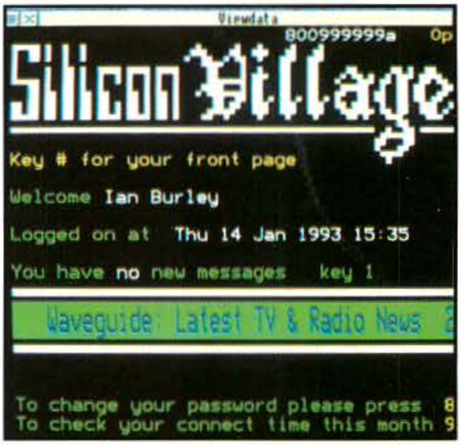

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Welcome Ian Burley
Logged on at Thu 14 Jan 1993 15:35
You have no new messages key 1
Waveguide: Latest TV & Radio News 2
To change your password please press 8
To check your connect time this month 9

Your Archimedes on the Phone
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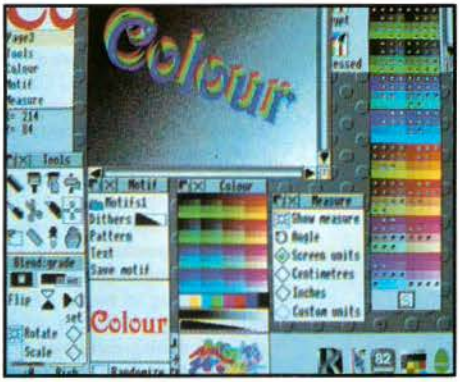

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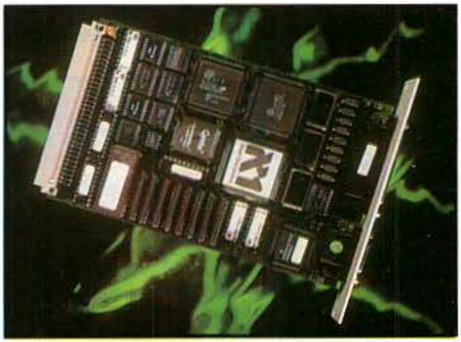

Aleph's PC Card
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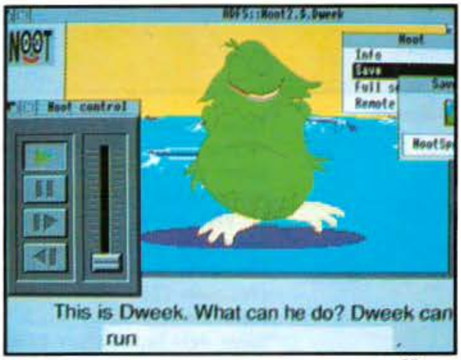


This is Dweek. What can he do? Dweek can
run

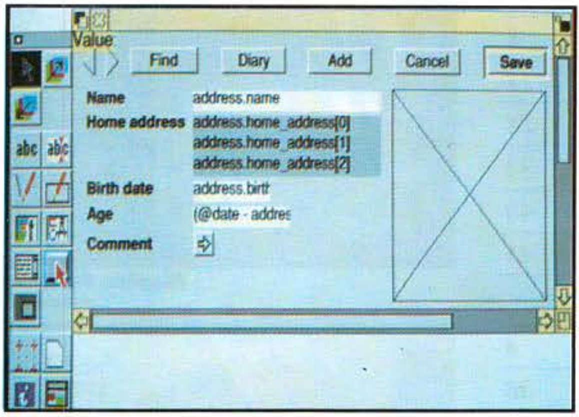
Noot
page 40

News

LONGMAN LOGOTRON'S S-BASE DATABASE

Longman Logotron has just announced the release of *S-Base*, a very sophisticated programmable relational database management system. At the heart of the S-Base system is a powerful, high level database programming language, called the S language. This comprises over 300 commands and functions, and allows the creation of highly customised database applications with a minimum of programming effort.

Applications produced with S-Base integrate with the RISC OS Desktop, with data entry and searching (for example) accessed through menus and dialogue boxes, as would be expected. Despite the fact that the databases produced are multi-tasking, Longman logotron claims that S-Base is very fast, due to some sophisticated indexing algorithms. There is also no limit on the number of files which can be open at once, leading to highly flexible relational capabilities, and the so-called STEALTH memory management system ensures that no more memory is used than is absolutely necessary. S-Base comes with a comprehensive tutorial spanning over 200 pages, which guides the reader from the basics, using examples on the way.



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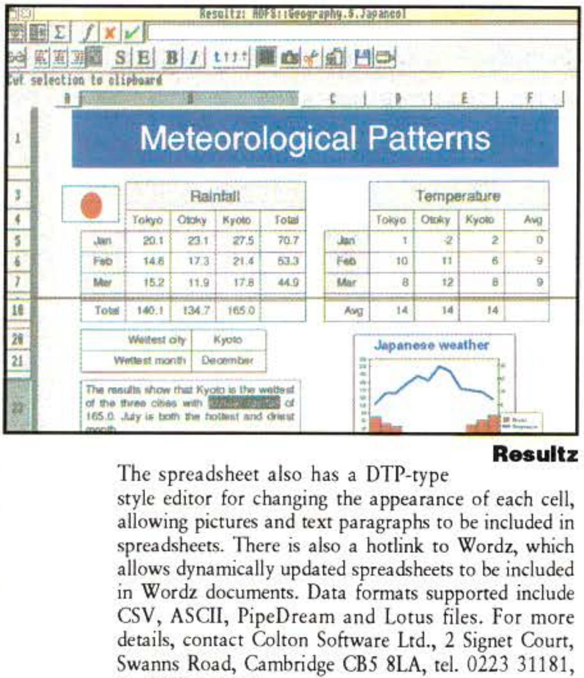
address.home_address[2]
Birth date address.birt
Age (@date - addres
Comment

S-Base

There are three versions of the database available, at varying prices. *S-Base Personal* costs £99 ex. VAT, and allows you to create and run database applications for your own use. The *S-Base Developer*, which costs £199 ex. VAT, allows you to compile database applications into standalone RISC OS applications, for distribution (for profit or otherwise). Finally, *S-Base Developer Plus* costs £299 ex. VAT and allows you to create multi-user applications which run over a network. For more details, contact Longman Logotron, 124 cambridge Science Park, Milton Road, Cambridge CB4 4ZS, tel. 0223 425558, fax 0223 425349.

RESULTZ FROM COLTON SOFTWARE

Resultz is a new spreadsheet from Colton Software, which should be available in the second quarter of 1993. The package features the same easy-to-use interface introduced in Colton's Wordz word processor, so that useful commands are available on an on-screen button bar; all you need to do is point and click. The spreadsheet boasts over 160 built-in arithmetic and statistical functions, with financial functions for business calculations, comprehensive string and date functions, matrix and complex number functions, and arrays. User functions are also programmable, so libraries of commonly used functions can be built up. Resultz has a fully WYSIWYG display in a Desktop window, and charts are shown as they will appear, with automatic updating to reflect changes in the data.


Resultz: ADFS::Geography.5.Japancol
Cut selection to clipboard
A
B
C
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10
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21
22
Japanese weather

Meteorological Patterns

	Rainfall			
	Tokyo	Otoky	Kyoto	Total
Jan	20.1	23.1	27.5	70.7
Feb	14.6	17.3	21.4	53.3
Mar	15.2	11.9	17.8	44.9
Total	140.1	134.7	165.0	

	Temperature			
	Tokyo	Otoky	Kyoto	Avg
Jan	1	-2	2	0
Feb	10	11	6	9
Mar	8	12	8	9
Avg	14	14	14	

Wettest city	Kyoto
Wettest month	December

The results show that Kyoto is the wettest of the three cities with [illegible] of 165.0. July is both the hottest and driest month

Resultz

The spreadsheet also has a DTP-type style editor for changing the appearance of each cell, allowing pictures and text paragraphs to be included in spreadsheets. There is also a hotlink to Wordz, which allows dynamically updated spreadsheets to be included in Wordz documents. Data formats supported include CSV, ASCII, PipeDream and Lotus files. For more details, contact Colton Software Ltd., 2 Signet Court, Swanns Road, Cambridge CB5 8LA, tel. 0223 31181, fax 0223 312010.

ACORN NEWS

Acorn Computers is still the number one supplier of computers to schools, as confirmed in a report just released covering the period April to October 1992. During this period, 67% of schools buying computer equipment bought Acorn machines; particularly impressive was in the Primary sector, where 77% of computers purchased were Acorns: a rise of 3 percentage points. The market for the Independent sector also rose, this time by 11 percentage points to 41%. The most popular computer in schools remained the A3000, which accounted for a quarter of all computers bought by UK schools. There were twice as many A3000s bought as the nearest rival, Research Machine's 386 PC.

Still on the subject of IT, Acorn is continuing to maintain its support for local IT advisory centres, despite the uncertain future many centres face. Acorn in Education Centres (AECs) are helping IT centres to make a smooth transition as the LEAs reduce funding and force IT centres into the commercial world. Acorn has also launched a series of fully resourced residential IT courses tailor-made for schools and colleges, by teaming up with SuperChoice, a subsidiary of the Pontin's Leisure Group. The so-called *Active-IT* courses are designed to take IT out of the classroom and explore cross-curricular themes through adventure and discovery. Each course is tailored for each group of pupils, and contains all sorts of pursuits including orienteering and field studies. For more information on these courses, call Lloyd Smith at SuperChoice on 0273 676467.

Acorn has also made what could be a potentially very important move by teaming up with Aleph One to launch a pair of PC Cards for the A3020 and A4000 machines. The cards will be similar to Aleph's 386 and 486 cards (see RISC User 5:5 and this issue for reviews), except that they will fit into the new machines and will be marketed under the Acorn name. This is the first PC Card to which Acorn has given its name, and it looks to be a shrewd move.

Photos on the Kodak Photo CD image system can now be displayed and manipulated on Acorn computers, following an agreement between Kodak and Acorn. Under the agreement, Acorn is updating its CDFS software to be able to read the Photo CD format, as well as porting the Kodak Photo CD Access Developer's Toolkit to run under RISC OS.

MULTIMEDIA AND ACORN REPLAY DIY

Continuing the multimedia theme, Acorn is launching its *Multimedia Expansion Unit*, designed to add CD-ROM expansion capability to any Archimedes system. Aimed primarily at the education market, the unit comprises the latest state-of-the-art Sony CD-ROM drive in a case that is styled to match the A4000 and A5000 computers, and contains two expansion bays designed to house another CD-ROM drive, a 3.5" magneto-optical drive, a tape streamer or a hard disc drive, all using a SCSI interface, which can be purchased at the same time. SCSI cards are available for the A3000/A3020 computers as well as the A4000 and A5000. Also housed in the unit is a sophisticated audio mixer and pre-amp, which allows any combination of three audio sources, either from the drives or the computer, to be mixed together or switched individually. A third party power amp is also available to drive speakers. The CD-ROM drive is typically faster than most: it can transfer data at 300K/sec as opposed to the more usual 150K/sec. The unit should be available in March 1993.

Still with multimedia, *Acorn Replay* is now available in a so-called DIY version which allows Replay movies to be produced without having to send off the raw video to a professional compression agency. Now Acorn Replay DIY capture cards have been developed (notably by Irlam Instruments) for the A5000 and A540 computers which can capture video in real time into a 24-bit format, and then compress it, with a typical reduction from about 37Mb per minute for raw data, to 5Mb per minute for compressed data. This is the first real step to enabling individual users to create Replay movies without needing lots of dedicated hardware.

MORE ACORN NEWS SNIPPETS

Acorn has launched *Acorn Advance*, a combined package featuring a word processor, spreadsheet, database and graphing package; *Acorn Options* is a new rental scheme whereby educational establishments can rent computer equipment without the need for large capital outlay; Acorn is a sponsor for the *Horizon* project in Hampshire, which aims to deliver some 30 multimedia applications built by teachers in the area; a CD-ROM pack called *World of Number* (sic) is to be launched by Acorn, which consists of four CD-ROMs to support the teaching of mathematics in the curriculum (key stages 3 and 4); and finally, Acorn's Education Directory is available on CD-ROM as well as in its normal printed format.

For more details on the above, contact Acorn Computers, Fulbourn Road, Cherry Hinton, Cambridge CB1 4JN, tel 0223 254254.

NEW UPGRADE SCHEME FOR WILD VISION'S HAWK V9 DIGITISER

Hawk V9 MkII

Wild Vision has announced an upgrade scheme for owners of *any* real-time colour digitiser for the Archimedes: they can now trade-in their digitiser for Wild Vision's Hawk V9 MkII digitiser. The MkII version of the Hawk V9 has a number of new features over the MKI, including the fact that the expansion card is now single width. Perhaps the most important new feature is that the digitiser now offers a live display in the the Desktop, because the dithering routines are present in hardware. This allows you to choose exactly when you want to grab an image; and when this happens, it appears instantly without the need for further processing. There are also more bits in the grabbed image - 16 as opposed to 12 - and better grey scale images are available using the new 6-bit monochrome format (i.e. 64 grey scales). The card costs £269 ex. VAT and carriage, and will fit the Archimedes range, the A5000 *and* the A3000. The upgrade from any real-time colour digitiser costs £135 ex. VAT (which includes £6 p&p), and anyone interested should contact Kathy Brown at Wild Vision, 15 Witney Bay, Boldon

Archimedes Software

SparkFS

Gives you room to expand!

SparkFS is a new compressed filing system that lets you fit more on your discs. Programs work as normal, but files take up less space.

- Reads ARJ, ArcFS, SEA/PKarc, PackdDir, Spark, Zoo, Zip, LZH, Tar, Packit, Stuffit and Compactor archive files.
- Writes SEA/PKarc, Tar, Zip and Spark archive files. Zip files can be used on other machines and retain attributes.
- DES data encryption to password protect your files. Supports UUcode, HQX, AtoB, FCET, Boo and UNIX Compress
- New features in v1.20. Image filing system on RISC OS 3. Zip Deflation. Full LZH support. Fast Zip loading. Application archives.

SparkFS with manual and case is £23.96 inclusive.

(Upgrades, owners of Spark and ArcFS, can deduct £5.99 each)

ArcFax Fax modem program

Allows sending and receiving faxes from the desktop using a Class 2 Fax modem. Received faxes can be saved as sprites. Faxes are sent by printing in the usual way. Script language, telephone directory, scheduling, received image processing. Works with SupraFax, TwinComm, Dynalink, Pace. Note Class 2 is an extension to the Hayes AT command set. All modems work with Group 3 fax machines.

Pace MicroLin FX Fax modem

Suitable for use with ArcFax, this modem will send and receive faxes at 9600bps and can be used as a 2400bps data modem with V42bis MNP data compression/error correction. It is very small and can be operated from a battery. Supplied with WinFax (PC hardware), modem lead, carrying case, manuals and AC mains adapter. 5 year guarantee. Computer Shopper best buy. BABT approved.

ArcFax £23.96, Pace modem £250, ArcFax and modem £270.

Also available Hearsay II full feature comms program from Risc Developments Add £40.
Prices fully inclusive. Free Acorn serial lead with modem, state computer model when ordering.

Disc 2 - MicroSpell 3.XX New Desktop Spell checker
Provides all the features possible in a stand alone spelling checker. Check files, check text in icons, continuous spell check whilst you type, display and correct last error. Edit dictionary. Multiple dictionaries. Supplied with 200,000 words. Fast. *(Owners of MicroSpell 2.XX can upgrade for free).*

Disc 7 - Chess
A Chess program that takes full advantage of RISC OS, running on the desktop in a window. You can work with other programs whilst you play Chess. Many features, computer play, hint, save games, edit etc. BAU Oct '92 said "Chess costs much less and plays better (than Cyber Chess)".

Disc 8 - CrossStar 2.XX Crossword puzzle solver
Fully RISC OS compliant desktop Crossword puzzle solver. 200,000 word dictionary. Solves interlocking clues. Editable/user definable dictionaries. Saves grids as Draw files. Browse through dictionary. Check grid for new words.

Disc 33 - Panorama. Your window on the World!
180,000 coordinates outlining the lakes, rivers, continents, state boundaries of the World and a program that can produce Draw files from them. You can make maps of any part of the world and then use them in DTP programs. Also positions of 1000 cities. Simple, cylinder, Mercator & perspective projections.

Disc 35 Trace/D2Font - Banish those jaggy blues.
Takes Sprites and turns them into Draw files. Sprite format pictures are plentiful, but if you try to magnify them, they develop jagged edges. Trace allows you to convert them into Draw files which can be made any size you want. With D2Font program for turning Draw files into fonts. Examples included.

Discs cost £5.99 each. Buy four get fifth one free!

David Pilling, P.O. Box 22, Thornton Cleveleys, Blackpool. FY5 1LR. UK.
Free Air Mail delivery on overseas orders. Please send for free catalogue.

Business Park, Boldon Colliery, Tyne and Wear NE35 9PE, tel. 091 519 1455, fax 091 519 1929.

THE REPTON SAGA CONTINUES

Superior Software has released *Ego: Repton 4*, the latest incarnation of the very popular Repton series which started on the BBC micro in the 1980s. There are thirty levels of play, and in each level you have to complete a jigsaw puzzle of a famous personality or place by collecting the various pieces which are scattered around. However, there are, of course, plenty of obstacles strategically placed to make your task a challenge, all following and expanding on the original Repton concept. Ego: Repton 4 costs £24.95 inc. VAT from Superior Software, P.O.Box 6, Brigg, South Humberside DN20 9NH, tel. 0652 658585.

NEW PRODUCTS FROM MINERVA

Minerva has announced a number of new releases. First off is *PrimeWord*, a new font-based word processor with spelling checker and dictionary. You can import graphics into pages, and the whole system has been designed to be as fully customisable as possible. PrimeWord costs £59 ex. VAT for single users, and £236 ex. VAT for a site licence. Next is ProCAD, the big brother of CADet, which was reviewed in RISC User 6:3. This professional CAD package has been designed to meet the exacting standards required by many disciplines in the professional world, and follows on from where CADet left off. ProCAD costs £495 ex. VAT for a single-user version, and £1980 ex. VAT for a multi-user site licence.

There is also a new version of the genealogy program *Ancestry* which allows the sideways print option to be seen on screen, and scrolled through prior to printing. In addition, the program no longer requires the master key disc to be present when running, so hard disc users will have an easier time of it. The update costs £11.75 inc. VAT for existing users if you return your original master disc. Contact Minerva Software, Minerva House, Baring Crescent, Exeter EX1 1TL, tel. 0392 437756, fax 0392 421762.

ACE COMPUTING AND OAK SOLUTIONS TO MERGE

Ace Computing and Oak Solutions will have merged by the time you read this. The two companies have a lot in common, mainly in the Computer Aided Design (CAD) stakes. According to Tony Cheal, Managing Director of Ace, the success of Ace Computing and the consequential volume of sales has been holding up development work on some significant projects, and it is hoped that the merger will allow Ace to focus on software development and support, as well as providing a cross fertilization of ideas which could produce some very interesting products in the future. Ace's name will still be used on its popular range of printer drivers, although the new company will be known jointly as Oak Solutions.

LE CLIP ART

A new company, R.J.H.Enterprises, has released its first disc of clip art with a French flavour. *French Clip Art Disc 1* contains over 200 Draw files depicting various aspects of life in the land of sheep farming and Jacques Delors. Uses range from enhancing projects at school to showing your appreciation of the ERM. The disc costs £6 (which includes a £1 donation to Christian Aid), and there is another disc in preparation. For more details, contact R.J.H.Enterprises, Beck Bottom, 9 Moorland Close, Embsay, Skipton, North Yorkshire BD23 6SG.

MATT BLACK EXTENDS CLIP ART RANGE

Matt Black has announced details of its *ArtRoom* CD-ROM,which contains the complete Image Club clip art library (see the News in RISC User Volume 5 Issue 10). This massive collection of over 4,000 clip art images is of the highest quality, stored in Encapsulated PostScript (EPS) format, so they can be loaded straight into Computer Concepts' ArtWorks application. The complete package consists of the ArtRoom CD-ROM, a 110-page printed index of all the images and full instructions. The CD-ROM costs £295 plus £2 p&p.

Also new from Matt Black is the *Vanguard Clip Art Volume 1 Disc*, which contains clip art covering the subjects of fantasy, tools and stationery. The clip art is supposed to be different in that each picture is designed to be as versatile and as attention-grabbing as possible, in order to add greatly to the impact of a page design. The Vanguard disc costs £14.99 plus £2 p&p from Matt Black, P.O.Box 42, Peterborough, Cambridgeshire PE1 2TZ, tel. 0733 315439.

MORE SHIELDING FROM TURING TOOLS

Turing Tools' *IronMask* application (see last month's News) could soon be improved to support a pool of authorised users plus an administrative super user, and refuse its services to anyone else, after an unexpected degree of interest from the educational sector. Turing hopes to be shipping this multi-user version by the time this appears, so for more information, contact Turing Tools, 149 Campbell Road, Cowley, Oxford OX4 3NX, tel. 0865 775059.

There were also a couple of inaccuracies in last month's item. The prices of £59 and £39 for first and additional copies respectively are not excluding VAT: Turing is not VAT registered, so there is no VAT to pay. Secondly, shielding a file prevents any access at all to that file, so you can't copy shielded files until you release the file by entering the correct password. Files are also be encrypted to make them useless if shielding is broken, but shielded files cannot be copied, as was implied last month.

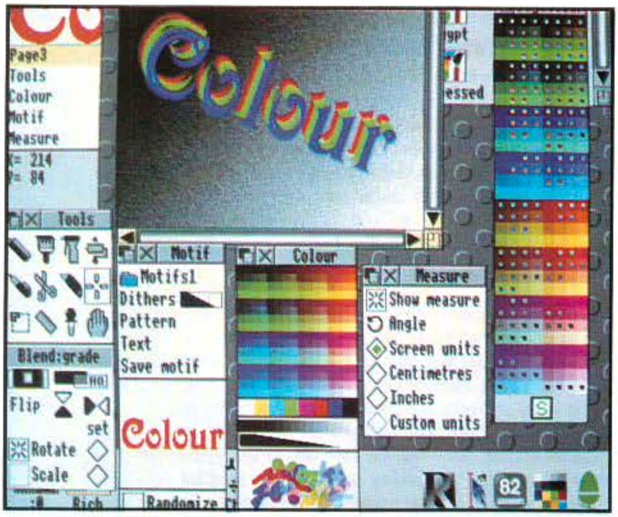
FRONTIER 2000 NOW ON CD-ROM

The CD-ROM of Cambridgeshire Software House's popular *Frontier 2000* cross-curricular program is now available. Frontier 2000 covers the history, geography and environment of the Border Regions from 43AD to 1991. The software is supported by a very comprehensive resource pack consisting of a VHS video, 9 full colour guide books, an audio tape and general information leaflets. It covers the Romans, Hadrian's Wall, transport, the environment, beliefs, the Civil War, railways and seven other areas of study. Aimed at the 8-16 age range, the CD-ROM contains Acorn Replay sequences, a speech option and many other multimedia features. Frontier 2000 costs £175 ex. VAT plus carriage. Contact Cambridgeshire Software House, 7 Free Church Passage, St. Ives, Cambridgeshire PE17 4AY, tel. 0480 67945, fax 0480 496442.

Revelation imagePro

Richard Hallas examines Longman Logotron's latest graphics package.

Longman Logotron's art and graphic manipulation packages Revelation and Revelation 2 have been highly acclaimed, and imagePro is the third and most powerful member of the series. Longman states that the three programs are respectively targeted at primary education, secondary education and professional artists and designers.



imagePro at work

THE PACKAGE

Revelation imagePro comes in a very glossy box-file. The manual, of which the latter half is in high quality colour, is very well presented and helpful. It guides you through the various stages of using the package, and contains some extremely useful 'guided tours' at the end.

ImagePro itself comes on a single unprotected disc, but two others are supplied to supplement the guided tours in the manual. They contain some very high-quality artwork, and the exercises are extremely well-devised. Two outline fonts are also supplied with imagePro, but they are not of a particularly high quality.

ImagePro will run on a 1Mb RISC OS 2 machine, but it does benefit from RISC OS 3, and 2Mb is really the minimum requirement to do anything useful.

IN USE

The icon bar menu allows you to choose between right-handed and left-handed mouse operation, and you can also decide whether you want to use normal RISC OS-style menus or the tear-off menus which were a feature of the previous releases of the application. In fact, imagePro has been improved in this area, and the tear-off menus now also work in the native RISC OS mode. For the uninitiated, the tear-off menus work like normal menus until you drag their title-bars, whereupon they transform into proper windows and stay on screen until you close them. It's a very handy system, and works well.

When you click on its icon, imagePro presents a dialogue box which allows you to create a page from around 1.75 to 22.5 inches per side, memory permitting. Up to eight pages can be open at once. ImagePro always creates a sprite in whatever screen mode you are currently using, and the complexities of mode numbers and their characteristics are never referred to: you simply create a 'page' in whatever screen mode suits you.

The first striking thing about imagePro is the quality and simplicity of its presentation. The attention to detail that has been put into its design is enormous, and every aspect of the package is very classy indeed. It has a set of icons for high resolution screen modes, and a set of distinctive pointer shapes for all the various tools. A very nice touch here is that the pointer always contains the current colour. The main menu has only five items, and at first sight the range of features does not seem particularly extensive. However, what you initially see is but the tip of the iceberg.

The colour menu tailors itself to whatever mode you are using. It includes a full-colour palette for solid colours, and a mixing palette. In full-colour modes it also provides a small palette of wash colours and a graded fill palette. The graded fill can be defined by picking two colours from the solid colour palette. The mixing palette lets you mix solid and wash colours to achieve the particular colour you are after.

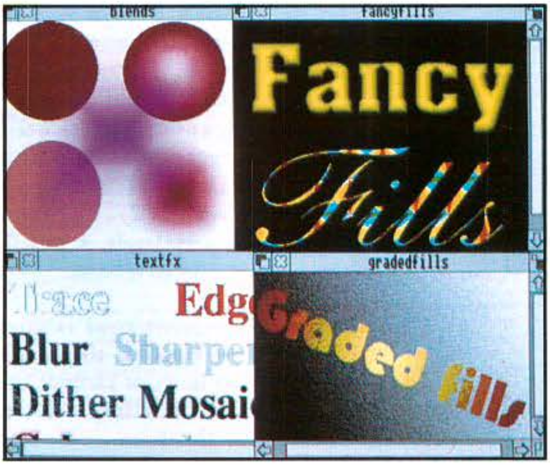
MOTIFS

You can even use motifs and dither patterns. A great deal of emphasis is put on motifs, and they allow some incredibly powerful operations. A motif can be any image from a simple shape to an entire picture, and can be obtained by drawing it yourself, loading it as a sprite from disc, or cutting it out of any area of the screen. A special directory can be set aside to contain motifs, and they are displayed in miniature in a selection window. What makes them really powerful is that they can be of any shape: masking is automatic, and it is very quick and easy to cut out irregular shapes from the screen. What's more, they can be used with perfect freedom by any of the tools instead of using colours. Motifs can be used in a repeating pattern, and there is an editor to determine their positions, offsets and directions relative to one another.

The toolbox has twelve basic tools, and as you click on each, the bottom of the window changes to show the relevant features relating to the chosen tool.

The Crayon, Brush and Spray tools use marks, the size and shape of which can be changed, and each tool has an independent user-defined mark. Each tool can draw in two patterns, the styles of which depend on the tool, and the density can be set via a slider. The crayon can draw in a regular pattern, or can produce a very successful imitation of a real wax crayon on rough paper. The Brush can either paint in a random pattern, or in a special 'bristle' effect. In conjunction with the user-defined mark, the bristle effect can be made to go in a direction set by moving the pointer. The Spray can either use a completely random pattern, or one which is weighted to a point at the centre, giving an airbrush effect. Each of these tools can be locked to the horizontal or vertical axes if necessary, and you can paint with a motif instead of a colour.

The Fill tool is extremely powerful. It has a wide range of options, and as well as filling with colours and motifs, you can use graded fills with colours chosen in the colour menu. The gradation can be either in distinct bands or in a smooth mix, with a 14-level scale from one extreme to the other. Graded fills can be either linear or circular, and the direction and magnitude can be set by dragging the mouse. The way this works is very similar to the fills in ArtWorks.



Various image processing options

The DrawPen tool allows you to draw numerous different kinds of shapes and lines. The shapes can be solid or outline: if solid, the fill pattern and density can be chosen as before and, if outline, the line thickness and join style can be determined. There is also a 'custom shape' which has a user-defined number of sides.

CHOP AND CHANGE

The Cut and Knife tools allow you to cut motifs out of your pictures in rectangles or freehand shapes, respectively. The icon bar menu offers similar facilities for cutting them out of areas of the screen other than imagePro windows. Paste is also extremely powerful. All images can be flipped, rotated and scaled during pasting, and you can choose between Solid and three kinds of Blend. Average and Dither Blends have a percentage scale to determine the extent of the effect, but Grade is by far the most powerful. It incorporates a 'grade profile' editor which determines the shape and intensity of pasting of the image. Using this is like setting the grey-map in scanner software, and the whole thing is incredibly powerful.

The Effects tool provides many of the image processing features: Trace, Edge detection, Blur, Sharpen, Dither and Mosaic. Each has a sliding scale to determine its strength except Mosaic, which has its own editor window. A number of basic shapes are provided, such as rectangles, diamonds and hexagons, and the overall size can be set very easily. Mosaic can be used to provide simple pixellation or much more interesting effects. The image processing features are fairly slow, but work very well indeed, and can be applied over a rectangle or a freehand shape. Any scanned image can be loaded into imagePro without losing resolution, so it could be very useful to owners of scanners, particularly colour ones. However, Acorn's 256 grey-level sprite format does not appear to be supported yet, so grey-scale scans are limited to 16 grey-levels. A pity: I hope this is rectified in a later version.

The measurement tool is surprisingly effective. It is possible to use centimetres, inches, screen units or custom units, which can be defined by setting a distance on the screen, and the base-angle can also be defined. You can then measure distances and areas quite accurately, which could be useful with technical drawings or maps.

Colour Shift and Grey Shift only work in 256-colour modes, but provide some of the most powerful features of the program. The Colour Shift box allows control over Tint, RGB Bias, CMYK Bias, Contrast, Saturation and Posterisation, and also provides a colour wheel (for translating colours) and a negative switch. It even tells you how many colours there are in the picture. The effects can be applied to the whole page or to a particular range of colours, and the effect can even be turned into a 'tool' and painted using the existing tools in the toolbox. The Colour Shift facility is very powerful, and one of the manual's guided tours explains how to produce colour separations using it.

Grey Shift is broadly similar to Colour Shift, and incorporates a scanner-style grey-map control with some preset shapes. Again, it is about as powerful as it could possibly be, and the effects can be used with the painting tools. The numerous other features of the program include a zoom control, a fairly powerful print feature, a single-stage undo and a 'Last Change' feature which is unusual and powerful: it turns the last operation into a motif, and can produce some interesting effects.

CRITICISMS

I am delighted to say that I have very few criticisms. ImagePro worked faultlessly and proved to be both powerful and robust. I was a little sorry that there were no dot-dash line patterns available and that anti-aliasing could not be used when pasting font text. A small point, but important to some, there are no keyboard short-cuts. I also wished that changing screen modes was less drastic: although imagePro does provide a safety net in the form of a last-minute error box, changing from (say) a 256-colour mode into a 16-colour one and back again leaves you with a 16-colour picture at the end; characteristics of pictures are not retained between modes. Although this is not a huge drawback, it is nevertheless irritating. I was also disappointed that my scanned 256-grey level sprites were rendered in 16 greys. Finally, it is a pity that sprites are not created in the 'base mode' for whatever screen mode is in use, because if you use custom modes (as I do), you will have to convert your pictures into a standard mode before they can be used on other machines.

CONCLUSIONS

ImagePro is to Paint what ArtWorks is to Draw. It is impeccably designed and superbly implemented, and is difficult to fault. It is everything it claims to be and offers very good value for money. Although some of the complex processing operations are quite slow, the application is generally acceptably fast in use and its flexibility is enormous. The way that all the tools are so well integrated is most impressive, particularly with regard to the way in which colours, washes, dither patterns, colour processing effects and motifs can be used interchangeably with all the tools. In short, if you want this kind of package, then imagePro is the one to buy. It's a superbly professional application.

Product *Revelation imagePro*
Supplier *Longman Logotron*
124 Cambridge Science Park,
Milton Road,Cambridge CB4 4ZS.
Tel. 0223 425558
Fax 0223 425349
Price *£139 ex. VAT*

The Portable Page

In the first of an occasional series, Lee Calcraft gathers some notes on Portable computing 'Acorn style'.

The Pocket Book

NEW AND NOT SO NEW FROM ACORN

The Pocket Book has been in plentiful supply for some months now, and by the time you read this the A-Link (reviewed in the last issue) should be available. The final part of the main product release is the OPL pack (£69.95 inc. VAT). This allows you to edit and compile programs in Psion's OPL language.

This facility is standard with the Series 3, so Acorn do not have any major tasks in reissuing the product in a stand-alone form. As soon as the pack becomes available we shall be reviewing it. Certainly, as supplied with the Series 3, OPL's Basic-like approach with some C subtleties and some high level data and screen handling functions thrown in for good measure make it a delight to use.

NEW FROM PSION

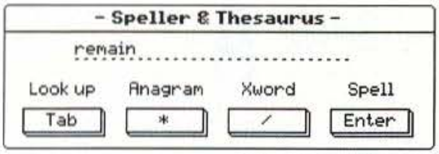
Psion have recently released their Spelling checker and Thesaurus pack for the Series 3 (£49.95 inc. VAT). The Pocket Book's bundled spelling checker is based on the Psion product, but the Acorn variant is a cut-down version which lacks the Thesaurus.

If you cannot decide whether to go for a Series 3 or a Pocket Book, the Thesaurus may tempt you to opt for the Psion. It appears as a fourth option on the Spell main screen, and to make use of it, you enter your target word into the same box as for the spelling checker (reviewed last month), and then press the Tab key rather than Enter. Within about five seconds the Series 3 displays synonyms for the chosen word. For most words it finds these in profusion, and displays them in groups with related meanings.

There is also a facility to give simple definitions of selected words. Thus for example, setting the Thesaurus to attack the word *remain* produces the following definitions in addition to 22 synonyms:

1. survive
2. continue
3. stay behind

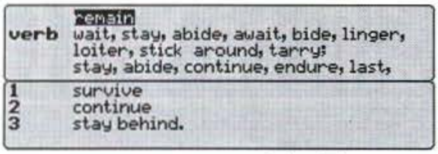
Another excellent feature is that by moving the cursor keys, you can mark successive synonyms. As each is highlighted its dictionary definition appears in a lower window. Moreover, if you press Enter at any point, the highlighted word is placed in the search box, so that by pressing Tab you can perform a new synonym search on it, and so on. This is a really excellent piece of software, and with an inbuilt dictionary of 100,000 words, and 600,000 Thesaurus cross references it offers massive palmtop power.



- Speller & Thesaurus -

remain

The main Speller/Thesaurus window



remain

verb wait, stay, abide, await, bide, linger, loiter, stick around, tarry; stay, abide, continue, endure, last,

1 survive
2 continue
3 stay behind.

The Thesaurus in use

The A4

Not much room for A4 gossip this month. But here are a couple of notes:

BATTERY PACKS

Beware of batteries that come loose. If you accidentally release the battery clip, and the battery breaks contact for a fraction of a second, your machine could go haywire (flashing LEDs etc.). The problem is that if the battery is to be disconnected, you must leave it disconnected for at least a few seconds before replacing it. If the problem arises, pull out the battery, and leave it out for 10 seconds before replacing it, and all should be well.

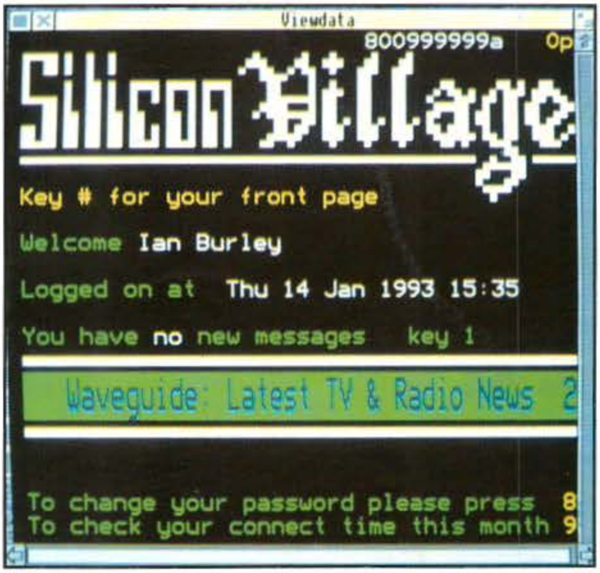
ECONET FOR THE A4

Acorn report that the internal Econet board for the A4 is already in stock in their warehouse, so by the time that you read this it should be in plentiful supply at your local dealer. The upgrade costs £58.75 inc. VAT.

Your Archimedes on the Phone

Expand your horizons with Ian Burley's guide to communications.

A rather undistinguished vacuum-formed black plastic device transformed my future back in 1983. I had just taken delivery of an acoustic modem for my BBC Model B which introduced me to the brave new world of online communications, or 'comms' for short. The modem I started with was provided by Micronet 800, the then-new Prestel-based computer magazine. Within months I was a member of the 'Net's editorial team and seven memorable years elapsed until I had the unhappy task of winding Micronet down as its last Editor back in October 1991.



Key # for your front page

Welcome Ian Burley

Logged on at Thu 14 Jan 1993 15:35

You have no new messages key 1

Waveguide: Latest TV & Radio News 2

To change your password please press 8
To check your connect time this month 9

Logging on to Silicon Village BBS (Viewdata)

To say that comms has dominated my life in recent years is no understatement! But I am just one of many thousands of modem-toting enthusiasts for whom life today without the ability to dial up public and private bulletin boards, use electronic mail (email) and online information services would be unthinkable. The benefits of such services remain undiscovered by many thousands more and in this article I hope to provide some insight into those benefits as well as explore some of the hardware and software comms options for Archimedes users.

COMMS FOR ALL

So what does comms have to offer? Firstly, one of the biggest lures into comms is free software. Bulletin boards and even the commercial online services like the Compulink Information Exchange (CIX) and Compuserve, are packed with hundreds of megabytes of software which subscribers are free to download and use. These two commercial services in particular have somewhat embryonic Archimedes offerings, but the non-commercial Fidonet network sports several bulletin boards dedicated to the Archimedes which have comprehensive software libraries.

Off the top of my head two such boards include *Arcade* run in London by David Coleman and David Dade plus *The World of Cryton* run by The Serial Port's Hugo Fiennes. There are also dozens of individual privately run bulletin boards all over the country which act as public domain software trading posts. The Silicon Village, a viewdata service which sprang from the ashes of Micronet, also offers a limited selection of Archimedes software and its library should be increased substantially once new file transfer protocols are implemented.

PROTOCOLS

A file transfer protocol (FTP) is an agreed method of transferring data files between computers. The simplest of these is straight ASCII text, but modem links can suffer from line noise so an error corrected method is preferable. XMODEM was one of the earliest FTPs to be introduced. It very simply divided the stream of data being transmitted into individually error-checked blocks. If an error was detected, the same block would be re-sent. Kermit is another system which uses block checking, as does YMODEM which has a faster more efficient checking procedure.

Widely regarded these days is ZMODEM. This has the lowest block-check overhead on transfer times. Data blocks are sent down the line uninterrupted until an error is detected, a process known as *streaming*.

Naturally the size of files being transferred needs consideration. Using ZMODEM and a correctly configured 2400 bits per second (bps) modem sporting MNP4 error correction, for example, you should be able to transfer about 16K per minute. With compressed files, using David Pilling's SparkFS utility for example, the effective throughput can be increased up to 24K or so per minute or even more. With 9600bps modems the effective transfer rate can exceed 100K per minute and the fastest currently available modems, operating at 14.4Kbps offer transfer rates of over 150K per minute (but such rates do depend on line quality).

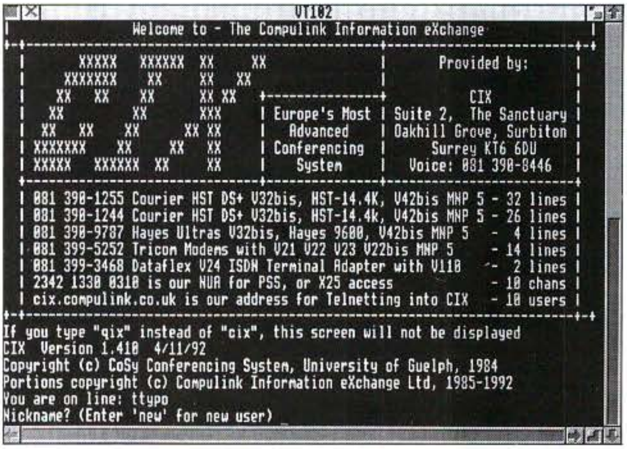
Dialling long distance at off-peak rates, even a 2400 baud MNP modem should be able download well over 100K of software for less than 50p. At local off-peak rates a 14.4Kbps modem could grab 750K of software for less than 10p! If you want to go even faster, you could try the new ISDN (Integrated Services Digital Networks) all-digital phone lines with transfer rates up to 64Kbps, over four times faster than the fastest modems and error-free as well. At the moment ISDN lines aren't cheap to install and as far as I know the only Archimedes board offering ISDN access is The World of Cryton, but it's a pointer to the future.

Currently, fast modems have never been cheaper. If you are willing to risk buying a non-BABT approved import, 14.4Kbps comms can be yours for less than £300. Approved modems are falling in price too. Many of these modems also have fax send and receive capability, doubling their versatility (see ArcFax review in RISC User 6:3).

CONFERENCING

But comms isn't just about telesoftware. Comms is a great way for keeping up to date and in touch with other people who have have similar interests. Many online services, free and commercial, offer specialist interest forums or conferences covering topics from computing to politics. Online discussions are often very stimulating and even heated at times!

The same conferences are also an excellent source of help and advice - publish the problem you are experiencing and no doubt you will get a number of useful replies. Private email is another attraction of comms. I personally regularly keep in contact with people all over the world via email, including a software developer at Microsoft in Seattle, for example. On CIX, users have access to the Internet worldwide email network and messages to Seattle cost less than air-mail rates and I can get replies in a matter of hours. .



```
|                      Welcome to - The Compulink Information eXchange                     |
+-+-------------------------------------------+---------------------------------+-+
  |     XXXXX  XXXXXX  XX    XX                |          Provided by:           |
  |    XXXXXXX   XX    XX  XX                  |                                 |
  |   XX   XX    XX    XX XX  +---------------+               CIX               |
  |  XX         XX     XXX    | Europe's Most | Suite 2,  The Sanctuary |
  | XX   XX    XX    XX XX    |   Advanced    | Oakhill Grove, Surbiton |
  | XXXXXXX   XX    XX  XX    | Conferencing  |      Surrey KT6 6DU     |
  | XXXXX  XXXXXX  XX   XX    |    System     |   Voice: 081 390-8446   |
  +---------------------------+---------------+-------------------------+
  | 081 390-1255 Courier HST DS+ V32bis, HST-14.4K, V42bis MNP 5 - 32 lines |
  | 081 390-1244 Courier HST DS+ V32bis, HST-14.4k, V42bis MNP 5 - 26 lines |
  | 081 390-9787 Hayes Ultras V32bis, Hayes 9600, V42bis MNP 5   -  4 lines |
  | 081 399-5252 Tricom Modems with V21 V22 V23 V22bis MNP 5     - 14 lines |
  | 081 399-3468 Dataflex V24 ISDN Terminal Adapter with V110    -  2 lines |
  | 2342 1330 0310 is our NUA for PSS, or X25 access             - 10 chans |
  | cix.compulink.co.uk is our address for Telnetting into CIX   - 10 users |
+-+-----------------------------------------------------------------------+-+
If you type "qix" instead of "cix", this screen will not be displayed
CIX  Version 1.410  4/11/92
Copyright (c) CoSy Conferencing System, University of Guelph, 1984
Portions copyright (c) Compulink Information eXchange Ltd, 1985-1992
You are on line: ttypo
Nickname? (Enter 'new' for new user) _
```

Computer conferencing with CIX (VT102)

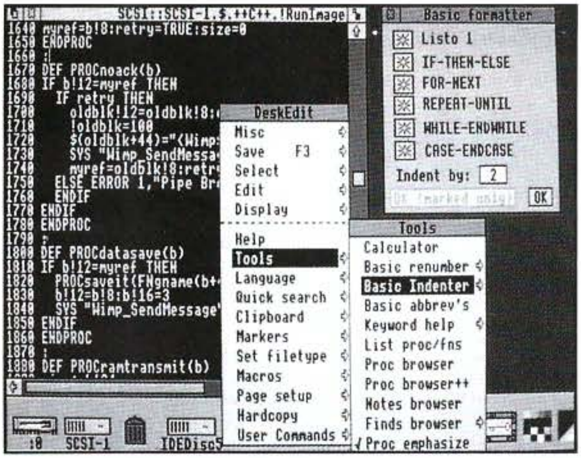
Compuserve users can have real-time chats with subscribers all over the world, though this facility is quite expensive. Schools in the UK keep in touch and access special education databases via the online service Campus 2000 which is jointly run by BT and The Times Network for Schools using the Telecom Gold and Prestel systems. A Campus 2000 Télétel link with French schools was introduced earlier this year.

Another increasing use for comms is for information searching. BT's Telecom Gold service offers access, at a price, to a wide variety of business information databases including FT Profiles, which contains newspaper and magazine article archives going back over five years, plus company financial and credit checking databases. Since BT's Directory Enquiries service increased its charges a while back, accessing

THE BEST PROGRAM AND TEXT EDITOR FOR THE ARC HAS JUST GOT A LOT BETTER

NEW DeskEdit 2

A major new release of the popular and powerful editor DeskEdit brings a whole toolkit of features that will assist all programmers, whether novice or experienced, and whether using Basic or C - and all within Acorn's powerful multi-tasking RISC OS Desktop. There is a lot for text users too.



```
1640 myref=b!8:retry=TRUE:size=0
1650 ENDPROC
1660 :
1670 DEF PROCnoack(b)
1680 IF b!12=myref THEN
1690   IF retry THEN
1700     oldblk!12=oldblk!8:
1710     !oldblk=100
1720     $(oldblk+44)="<Wimp:
1730     SYS "Wimp_SendMessa
1740     myref=oldblk!8:retr
1750   ELSE ERROR 1,"Pipe Br
1760   ENDIF
1770 ENDIF
1780 ENDPROC
1790 :
1800 DEF PROCdatasave(b)
1810 IF b!12=myref THEN
1820   PROCsaveit(FNgname(b+
1830   b!12=b!8:b!16=3
1840   SYS "Wimp_SendMessage"
1850 ENDIF
1860 ENDPROC
1870 :
1880 DEF PROCramtransmit(b)
```

Using DeskEdit's new Tools

- **Throwback** is fully implemented so DeskEdit can respond to messages from C compilers etc.
- **!FIND** - DeskEdit comes with a powerful stand-alone Acorn application called *Find*, which can find text strings in a whole group of files, just given a wildcarded filename.

  DeskEdit picks up the output from *Find*, and displays a window with all the finds. Just click on any find in the window, and the file will be automatically loaded into DeskEdit (if it is not already there), and the caret will be placed at the find.
- **Extended Saves** - DeskEdit 2 will (optionally) save a special data file each time you make a normal save. Next time you load your file, not only will the caret be where it was when you saved it, but wordwrap will be correctly set, all markers will be set to their previous positions, and pressing Undo will actually take you through what you did when you last edited your file!

And there is much more that is new in DeskEdit 2.

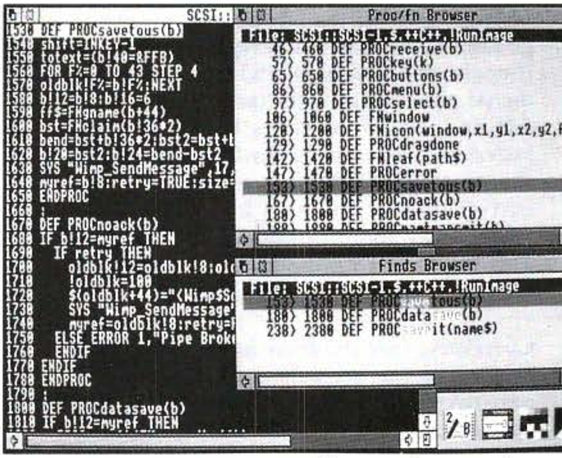
A new Keyword Help can now give help on any keyword marked in your text. A full Basic Help file is included.

The first line of Function and Procedure definitions can be highlighted in a printout. QuickSearch can now be performed backwards as well as forwards, and can also find procedure and function definitions which match your string. You can even use a marked piece of text to supply the target string for a Quicksearch.

Shift-Delete deletes to the end of a line, Ctrl-Delete deletes to the start of a line, and Shift-Ctrl-Delete deletes left and appends to the line above. Shift-Backspace performs an intelligent word-delete. There are new tabbing options etc. **All designed to make editing fast and efficient.**

NEW FEATURES INCLUDE:

- **Basic program Renumber** - and for a partial renumber, just mark a section.
- **Basic Program Indenter** - automatically reformats Basic program to indent after IF THEN, REPEAT, FOR etc. - all fully customisable.
- **Basic Abbreviations** - all Basic V's several hundred abbreviations are implemented (optionally). Just type P. and if you are in Basic it will change into the keyword PRINT.
- **Programmer's Calculator** - a powerful calculator especially designed for handling bits and bytes. Simultaneously operates in decimal, hex and binary, and can import and export results to and from any text window.
- **Multi-purpose Browsers** - Press F2, and enter a search string. This brings up a browser window containing a list of finds. Click on any one of these and you are taken to the corresponding place in your source or text file. Alternatively Shift-F2 puts up a new browser window containing a list of all the functions and procedures defined in your source.



```
1530 DEF PROCsavetous(b)
1540 shift=INKEY-1
1550 totext=(b!40=&FFB)
1560 FOR F%=0 TO 43 STEP 4
1570 oldblk!F%=b!F%:NEXT
1580 b!12=b!8:b!16=6
1590 ff$=FNgname(b+44)
1600 bst=FNclaim(b!36*2)
1610 bend=bst+b!36*2:bst2=bst+b
1620 b!20=bst2:b!24=bend-bst2
1630 SYS "Wimp_SendMessage",17,
1640 myref=b!8:retry=TRUE:size=
1650 ENDPROC
1660 :
1670 DEF PROCnoack(b)
1680 IF b!12=myref THEN
1690   IF retry THEN
1700     oldblk!12=oldblk!8:ol
1710     !oldblk=100
1720     $(oldblk+44)="<Wimp$Sc
1730     SYS "Wimp_SendMessage"
1740     myref=oldblk!8:retry=
1750   ELSE ERROR 1,"Pipe Brok
1760   ENDIF
1770 ENDIF
1780 ENDPROC
1790 :
1800 DEF PROCdatasave(b)
1810 IF b!12=myref THEN
```

```
File: SCSI::SCSI-1.$.++C++.!RunImage
  46) 460 DEF PROCreceive(b)
  57) 570 DEF PROCkey(k)
  65) 650 DEF PROCbuttons(b)
  86) 860 DEF PROCmenu(b)
  97) 970 DEF PROCselect(b)
 106) 1060 DEF FNwindow
 120) 1200 DEF FNicon(window,x1,y1,x2,y2,
 129) 1290 DEF PROCdragdone
 142) 1420 DEF FNleaf(path$)
 147) 1470 DEF PROCerror
 153) 1530 DEF PROCsavetous(b)
 167) 1670 DEF PROCnoack(b)
 180) 1800 DEF PROCdatasave(b)
```

```
File: SCSI::SCSI-1.$.++C++.!RunImage
 153) 1530 DEF PROCsavetous(b)
 180) 1800 DEF PROCdatasave(b)
 238) 2380 DEF PROCsaveit(name$)
```

The new Browsers in use

All this of course is in addition to the features that have made DeskEdit so popular among users of Acorn machines, and which resulted in glowing reviews when it was first launched a year ago.

IN FACT DESKEDIT IS SO GOOD THAT IT IS USED WITHIN ACORN ITSELF.

DeskEdit 2 includes disc, new manual, keystrip and quick reference card.

PDE2b	£26.95 inc VAT + £2 p&p
PDEXa	£9.95 inc VAT + £1 p&p (upgrade*)

* Return original disc with order to:

RISC Developments Ltd. 117 Hatfield Road, St Albans, Herts AL1 4JS

the online equivalent, Phonebase, has become very attractive. Phonebase provides access to the same national telephone directory database as BT's staff. The Yellow Pages is also available online at an attractive rate.

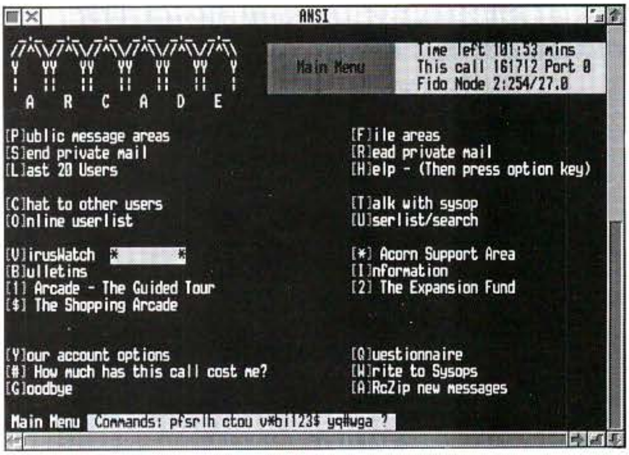
CHOOSING THE SOFTWARE

Archimedes users are blessed with a small but high-quality selection of comms programs with which to exploit all the above services. For starters Hugo Fiennes has provided a free public domain version of his ARCterm program, though this doesn't run in the RISC OS Desktop. The commercial version, ARCterm 7, is a fully implemented RISC OS program with a lot of bells and whistles including a very powerful C-like script language. Risc Developments' own Hearsay II package is the best selling Archimedes comms package and is a genuine match for ARCterm's features. From the same author, David Pilling, comes another PD freebie in the form of TaskData, which only offers basic features but works in the Desktop. For less money than ARCterm 7 or Hearsay II, though less features, Longman Logotron markets ArcComm 2 - an especially good program if you need to access advanced videotex services like Germany's *Bildschirmtex*. Another Archimedes comms program I've heard of, but not seen, is Acom - originating from Holland, I believe.

You can also turn your Archimedes into a bulletin board in its own right for others to log into, even linking up with other bulletin boards via the Fidonet system. A public domain program is freely available for just this purpose, called RiscBBS - though Fidonet compatibility was yet to be completed last time I checked it out. Once again Hugo Fiennes' name pops up, as he produced the BBS software for his own The World of Cryton board and the popular Arcade system. Hugo's ARCbbs software includes Fidonet connectivity but it will cost you over £100.

We mustn't overlook RemoteFS from Aleph One. This is a versatile software-based file-access system which lets one Archimedes treat the files of another as its own across a suitable link. One of the link-up options is, of course, via modem (Computer Concepts' FaxPack also approaches these features).

To me the argument in favour of online computer communications is as compelling as the need for say, a fax machine in the modern office. The analogy is an interesting one as both use the telephone for digital communications but the fax machine has been far more successful in practice. A fax machine is just like a photocopier, anybody can use one with the minimum of effort. Comms has been blighted by conflicting standards and the complexity of its installment and use. But once you've conquered the initially steep comms learning curve, the rewards can be enormous.



```
  A   R   C   A   D   E                Main Menu   Time left 101:53 mins
                                                   This call 161712 Port 0
                                                   Fido Node 2:254/27.0

[P]ublic message areas                [F]ile areas
[S]end private mail                   [R]ead private mail
[L]ast 20 Users                       [H]elp - (Then press option key)

[C]hat to other users                 [T]alk with sysop
[O]nline userlist                     [U]serlist/search

[V]irusWatch  *          *            [*] Acorn Support Area
[B]ulletins                           [I]nformation
[1] Arcade - The Guided Tour          [2] The Expansion Fund
[$] The Shopping Arcade


[Y]our account options                [Q]uestionnaire
[#] How much has this call cost me?   [W]rite to Sysops
[G]oodbye                             [A]RcZip new messages

Main Menu  Commands: pfsrlh ctou v*bi123$ yq#wga ?
```

Arcade BBS main menu (ANSI)

Ian Burley is a freelance technology journalist (formerly editor of Micronet) and the News Editor of BBC Acorn User Magazine. He can be contacted via email on CIX as iburley, Internet via CIX as iburley@cix.compulink.co.uk, on Arcade as user No.626 and on The World of Cryton as user No.342.

For reference, online services to try:

The World of Cryton: Tel. 0749 670 030
(ANSI terminal, 8N1)
Arcade: Tel. 081 654 2212
(ANSI terminal, 8N1)
CIX: Tel. 081 3901255
(Scrolling text, 8N1)

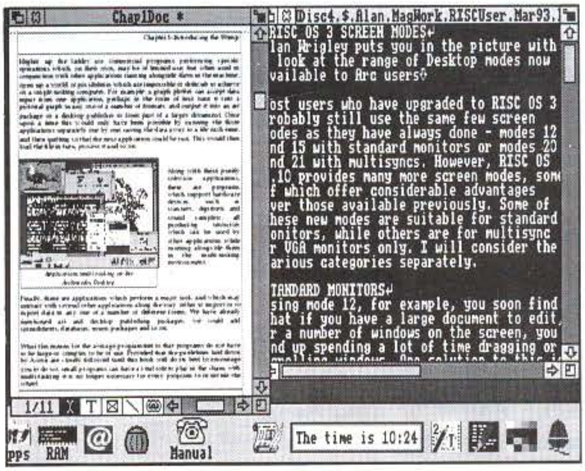
For further information:

Campus 2000: Tel. 0442 237 812
Compuserve: Tel. 0800 289 378
The Silicon Village: Tel. 0734 819 351

RISC OS 3 Screen Modes

Alan Wrigley puts you in the picture with a look at the range of Desktop modes now available to Arc users.

Most users who have upgraded to RISC OS 3 probably still use the same few screen modes as they have always done - modes 12 and 15 with standard monitors or modes 20 and 21 with multisyncs. However, RISC OS 3.10 provides many more screen modes, some of which offer considerable advantages over those available previously. Some of these new modes are suitable for standard monitors, while others are for multisync or VGA monitors only. I will consider the various categories separately.



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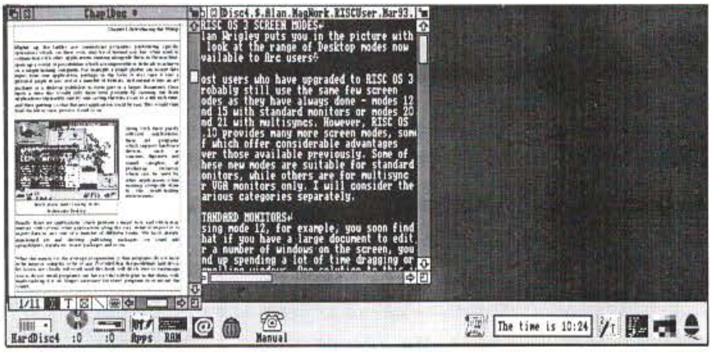
Mode 12

STANDARD MONITORS

Using mode 12, for example, you soon find that if you have a large document to edit, or a number of windows on the screen, you end up spending a lot of time dragging or scrolling windows. One solution to this is to use mode 16, which gives a wide screen and therefore much more space to "park" windows without obscuring the one you are working on. Unfortunately, if you are editing text you soon end up with eye strain since mode 16's 132 columns make text much less clear to read. RISC OS 3.10 now provides a better solution in the shape of modes 33-36, which have a text resolution of 96x36 (most, though not all, modes come in groups of four, providing 2, 4, 16 or 256 colours). This is done by extending the screen display to cover the border area, and as a result the size of text is exactly the same as in mode 12, but with around 20% more screen area to play with. It also gives you more room on the icon bar.

This extra screen area is also very useful if you use a sticky backdrop such as Acorn's Pinboard or RISC User's *SuperBD* (supplied on the 6:2 magazine disc). It can be annoying to find that the icon you want is always obscured by a window; more screen makes that a little less likely to happen. See this month's *Hints & Tips* for a useful hint on using backdrops.



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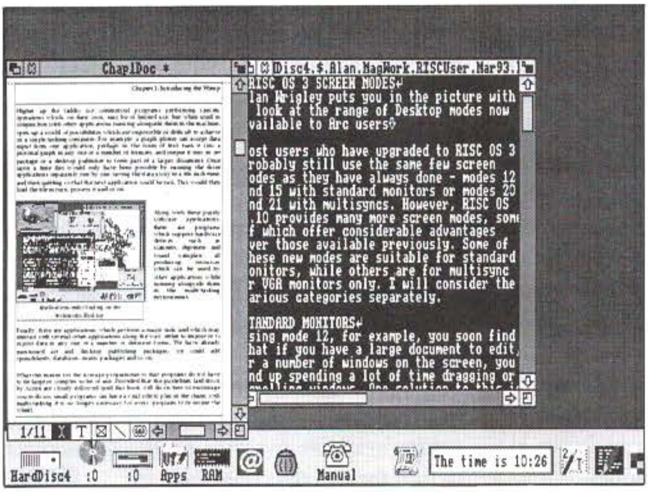
Mode 16

Another interesting new mode for standard monitors is mode 22. This is also nominally 96x36 characters; I say nominally because you will only see this resolution outside the

Desktop. Within the Desktop the display becomes double-sized, as if it is being viewed through a magnifier. This gives a clue to the main purpose of this mode, which is to help visually handicapped users. It could also be useful in the classroom or where the computer is used for demonstrations.



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Mode 35

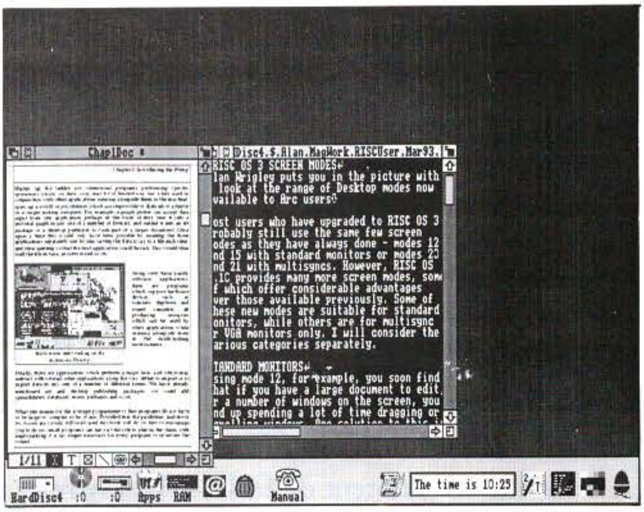
MULTISYNC MONITORS

More and more users are appreciating the increase in display quality to be gained from multisync or VGA monitors, particularly since the latter are widely available at acceptable prices as a result of their widespread use in the PC world. RISC OS 3.10 has a number of new modes for these monitors. A multisync monitor can handle *all* screen modes except mode 23, which is designed for hi-res monochrome monitors, whereas only modes 25-28 and 41-46 are designed for VGA monitors (with additionally modes 29-31 for Super VGA).

A "standard" multisync mode, such as mode 20, provides a text resolution of 80x64. However, 64 lines of text on a screen appears rather squashed, so under the Desktop text is displayed at double height, i.e. the same actual text size as in a non-multisync mode. This can give rise to the problem of screen clutter mentioned earlier, since the amount of information on the screen is no greater than in mode 12 despite the higher resolution. You can use modes 33-36 as described above to get a 96x36 display, but since they are designed for standard monitors the quality will not be as good as in mode 20. A better solution is provided by modes 37-40 which offer a text resolution of 112x44. The vertical resolution is not diminished under the Desktop, so you get 44 lines of text on the screen and plenty of extra space to park windows. Most users should find this resolution acceptable for text editing, though it could be a strain if used for prolonged periods.

VGA

Modes 25-28 are the normal modes for VGA monitors, and are similar in appearance to the multisync modes 18-21. Modes 29-31 are provided for Super VGA monitors. All these modes can also be used by multisyncs, and mode 31 in particular is quite useful.



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Mode 39

This is a 16-colour mode with a text resolution of 100x75 (100x37 on the Desktop) and so can be used as an "extra space" mode similar to mode 39. Modes 41-43 provide the 44-line vertical resolution of modes 37-40, but with a horizontal text resolution of only 80. Modes 44-46 are provided for use with the PC Emulator in CGA mode.

PIXEL SIZE

One point to be aware of when changing modes is the ratio of pixel size to OS units. This can affect the display of graphics objects, for example circles. The OS unit resolution can also affect some incorrectly-written applications which do not read its value but expect it to be 1280x1024 as for most of the original modes. Some early sticky backdrops fall foul of this, with the result that you cannot stick icons to the backdrop outside a certain area of the screen. Modes 33-40 all maintain the same pixel-to-OS ratio as mode 12, i.e. 1:2 horizontally and 1:4 vertically, while modes 25-31 are the same as mode 20 - 1:2 in both axes. Table 1 shows the various resolution figures for the modes described in this article. Where only 3 modes are shown in a group, there is no 256-colour mode.

CARET COLOUR

Most of the modes described so far have 16- and 256-colour versions. Apart from the obvious reason for using a 256-colour mode, which is to display graphics such as digitised pictures in full colour, there is another useful difference between the two. The colour of the caret is set by the Wimp using a calculation based on the colours on screen. This can often be much clearer in a 256-colour mode. For example, in an Edit window with a black background, the caret colour in mode 12 would be cream, while in mode 15 it would be bright blue, which for most users is an easier needle to find in a haystack of white text.

To summarise, then, there are a number of new screen modes which can make quite a difference to the amount of information that can be displayed on the screen, and it is well worthwhile experimenting with all the modes available for your particular monitor to find the one that suits you best.

If YOU are thinking seriously about

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1st and 1st JR have enhanced specifications. For example:

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The PC Emulator Survival Guide (1)

In the first part of this new series devoted to easy use of the PC Emulator, Gordon Gilmore introduces the PC World.

The PC Emulator is a remarkable piece of software which opens up the whole world DOS and Windows to the Archimedes User. It is a strange world inhabited by C:>, EDLIN, ANSI.SYS, AUTOEXEC.BAT and other odd creatures, with strange continents known as extended memory and expanded memory ruled by *terminate and stay residents* (TSRs). Passing through the Emulator gateway (or should that be window) into this DOS world is not always a pleasant experience for us fortunate ARM users. The aim of this article, and those to follow, is to de-mystify DOS and to help the ARM user to use it with the minimum of effort.

Perhaps we ought to consider why anyone should want to use the PC Emulator at all? I suspect that, like myself, a great many Emulator users use a PC at work and would like to be able either to bring work home or to use their favourite DOS spreadsheet to do their home accounts. Others may simply want to dabble to find out what the PC is all about. It is to all these occasional users that these articles are addressed.

HOW BIG A MACHINE?

Much recent PC software will be written for *Windows*, the proprietary name of the Microsoft program providing a Wimp environment for the PC. Windows places heavy demands on the processor and, unless run on the latest 80386 or 80486 versions of the PC, is slow.

Remarkable though it is, the Emulator cannot hope to match the speed of these more recent PC machines. Although the Emulator is capable of running Windows, the speed penalty is too great for comfort (see RISC User 6:1, page 38). So, as far as this series is concerned, Windows is out.

One of the first surprises when one comes to load PC software is the enormous amount of memory and disc space needed. To be realistic, running programs from floppy disc is no longer an option on the PC. Many applications need megabytes of disc storage and often almost as much RAM to run them in.

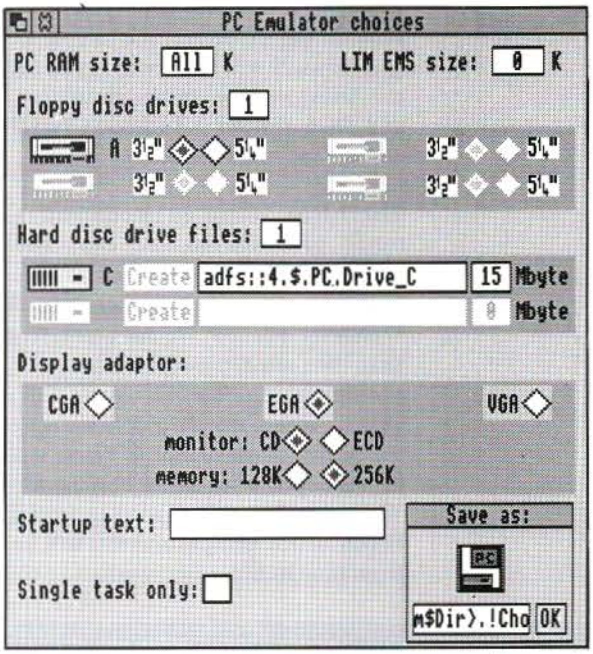
PC Emulator choices
PC RAM size: All K
LIM EMS size: 0 K
Floppy disc drives: 1
A 3½" ● ○ 5¼"
Hard disc drive files: 1
C adfs::4.$.PC.Drive_C 15 Mbyte
Display adaptor: CGA ○ EGA ● VGA ○
monitor: CD ● ○ ECD
memory: 128K ○ ● 256K
Startup text:
Single task only: ☐

Figure 1. The choices dialogue box

In these articles I will have to assume that you have a hard disc available, set up with a disc partition for DOS use. The size of the partition is not critical - I can get away with half of my 30Mb disc set aside as a 15Mb DOS partition, but for serious PC use a much larger hard disc partition would be needed. Preparing the hard disc partition is described in the Emulator manual and in an excellent article by Kevin Bracey in RISC User 5:7. For the time being set up your Emulator configuration as shown in Figure 1. Your window will, of course, show the name and size of the hard disc partition you have set up on your system. Select all RAM available for the Emulator, no LIM EMS (explanations later), EGA graphics using 256K of memory and no startup text.

I will also assume that you are running a machine with at least 2Mb, and preferably 4Mb of RAM.

DOS, the disc operating system, is the equivalent of RISC OS on the ARM machines. Unlike RISC OS, DOS is stored on disc and is reloaded each time the computer is booted-up. This has advantages from the point of view of updating DOS but leaves the system more vulnerable to virus attack. The most recent version of DOS available is 5.0 but even with the latest version of the Emulator, Acorn only provide the earlier version 3.3 to keep the cost down. I will assume that you are using the latest version of the Emulator, 1.80, and DOS version 3.3 (though versions 1.6 and 1.7 are much the same).

The ARM Wimp environment is much more pleasant to use that the DOS command line, and it makes sense to do as much as possible under the Wimp. Whenever possible we are going to do just that. We must remember, however, once the Emulator is booted up we will not be able to access the hard disc partition from the ADFS. Any attempt to do so will result in 'File open error when reading Drive_C'. We will still be able to read and write to the floppy drives though, and this will be a help from time to time.

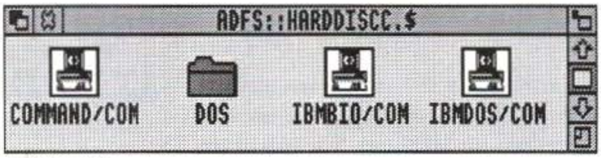

Figure 2. Hard disc partition under RISC OS 3

THE STARTING POINT

So to business. We've followed Kevin Bracey's instructions and we have a DOS hard disc partition of a suitable size. Ignore the instructions in the article concerned with CONFIG.SYS and AUTOEXEC.BAT, as we are going to create them anew in the next article. If you now display the Filer window either by clicking on the hard disc partition icon under RISC OS 3 or by using MultiFS under RISC OS 2, the list of files should look like those in Figure 2.

If you are using MultiFS the icons will appear rather differently. This displays the DOS root directory, the equivalent to the $ directory of the ADFS filing system. The root directory under DOS is specified by a single backslash - \. So to get the equivalent list under DOS we might use the command:

```
    DIR \
```

We would expect to see in our PC window:

```
C> DIR \

 Volume in drive C is HardDisc4
 Directory of  C:\
COMMAND  COM     25307    3-17-87  12:00p
DOS          <DIR>       11-26-92   1:15p
        3 File(s)    649216 bytes free

C>
```

DOS names are up to eight characters long followed by a full stop and an optional filename extension up to three characters: 12 characters in all. Although the directory list doesn't include the '.' you must supply it when referring to the file e.g. COMMAND.COM. Don't be fooled by the space in the directory listing either: DOS filenames cannot contain spaces.

Displaying DOS names in an ADFS format presents difficulties. One is that under ADFS the full stop is a special character used as a path separator (the DOS equivalent is the backslash '\') and the ADFS display of a DOS directory replaces the full stop by a backslash character (/).

Surprisingly, the two files IBMBIOS/COM and IBMDOS/COM do not appear at all in the DOS directory list. These are the heart of the PC operating system, the BIOS and DOS files, which are loaded into memory when the computer, or in our case the Emulator, is booted up (the equivalent in RISC OS is held in ROM and does not need to be loaded from disc). Because of their importance these files have been given a 'hidden' attribute to prevent them appearing on directory lists or from being renamed or deleted by ordinary DOS commands. However, beware! Using the ADFS these files can be deleted and renamed if the 'Force' option for the Copy command is set.

The file extension is used by DOS in much the same way as the RISC OS filetype to indicate the function of a file. So, for example the extension .EXE, as in FIND.EXE, indicates an executable file and .BAT, as in AUTOEXEC.BAT, is a batch command file, comparable to a RISC OS Obey file.

COMMAND.COM is the command interpreter equivalent to the command line interpreter which interprets commands given at the * prompt under RISC OS.

DIRECTORY DISCIPLINE

In my experience PC people are lazy. If you get the opportunity to play on somebody else's PC have a peek at the root directory. More than likely there will be dozens and dozens of files, some of which must be there, some which are temporary files no longer wanted on voyage, some wanted but mislaid long ago. All for the want of a few directories. To be fair, DOS does not encourage the kind of directory discipline which comes as second nature in RISC OS. As more and more applications are loaded onto the hard disc the root directory will become crowded enough with files which must be there. To eliminate the possibility of accidentally erasing a critical file our first piece of defensive strategy is to create a working directory, a sort of scratchpad area where we can keep files we are working on at the moment without them cluttering up (or being cluttered up by) the root directory.

Using the Filer menu create a new directory in the DOS root directory with a suitable name - I use COMMON. If I have to leave this directory for any reason I make sure that I end up back there. Nothing important will ever be saved here permanently.

From time to time you will acquire useful utility programs, the first example probably being the mouse controller program, AMOUSE.COM, and it makes sense to keep these together in a separate directory. So, again using the Filer menu, create another new directory in the root called, say, UTILS, open the UTILS directory and copy all the files from the Acorn PC Emulator DOS Support disc into it. Now with our three directories, DOS, UTILS and COMMON, and the DOS files organised, we are now ready to set up a congenial working environment. Our Filer window, this time using MultiFS, should look like Figure 3.

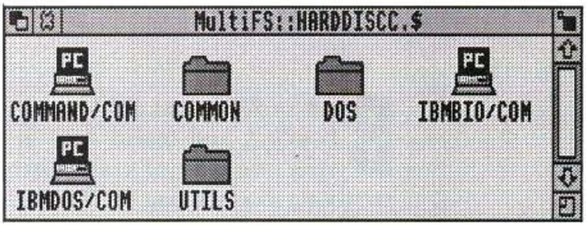

Figure 3. Hard disc partition under MultiFS

Next time we shall look at the mysteries of the CONFIG.SYS, and set our boot-up files to create a comfortable working environment.

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To form your copies of RISC User into a convenient reference library you need a RISC User binder. These are available in an attractive shade of blue with the name RISC User blocked in silver on the spine. Each binder is supplied with additional lettering so that you can label the binder with the year and/or volume numbers.

RISC User binders are available in two sizes, both at the same low price of just £4.20 inc. VAT. The new size binder will hold the new Volume 6 issues of RISC User at the B5 size.

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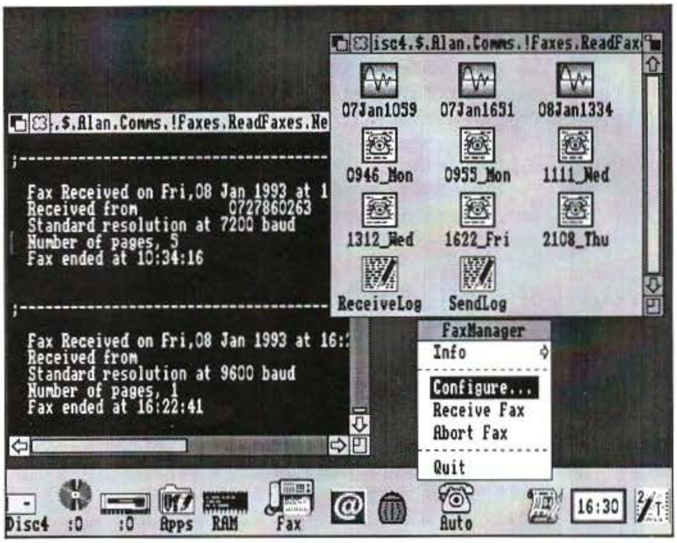
FaxPack Update

Alan Wrigley looks at the latest additions to Computer Concepts' fax card.

Back in RISC User 5:6 I reviewed CC's *FaxPack* and found it to be a very effective way of transmitting and receiving faxes using an Archimedes. I indicated at the time that a number of enhancements to the system were planned, and now CC has released an upgrade which includes the file transfer and answering machine facilities referred to in the earlier review.



```
;-----------------------------------

  Fax Received on Fri,08 Jan 1993 at 1
  Received from          0727860263
  Standard resolution at 7200 baud
  Number of pages, 5
  Fax ended at 10:34:16

;-----------------------------------

  Fax Received on Fri,08 Jan 1993 at 16::
  Received from
  Standard resolution at 9600 baud
  Number of pages, 1
  Fax ended at 16:22:41
```

The faxes directory, showing both faxes and audio messages received in a FaxPack. A section of the log file is also shown

I have been using FaxPack continually over the 10 months since the original review, and I have to say that it has performed faultlessly and handled my every requirement in the fax department, though it does now have some competition in the market from David Pilling's *ArcFax* (see RISC User 6:3). I have therefore been eagerly awaiting the new additions since they promised to be extremely useful for the kind of work I do.

THE UPGRADE

The upgrade package consists of a new ROM for the expansion card together with a new set of applications on a floppy disc. Some earlier systems will also require a new manual. The upgrade is supplied free of charge to existing users as CC considers it to be an integral part of the system and not just an add-on.

THE ANSWERING MACHINE

If the original concept of using your computer as a fax machine was exciting, then the idea of using it as an answering machine is even more so. For those who make only light use of faxes and cannot justify a second phone line, but still need the ability to receive them at non-predetermined times along with voice calls, this is a brilliant idea.

The facility is controlled from a configuration option in the fax manager. When this is on, and reception is switched to *Auto*, then FaxPack will answer incoming calls and play a message which consists of a sound sample file. CC provides a simple file which is suitable, but if you have access to a sound sampler you can create your own message (or you can just phone your FaxPack from elsewhere and then use your incoming message as the sample file for future, albeit rather noisy, outgoing messages). To a caller this sounds just like a conventional answering machine, and he may leave his own spoken message after the tone, which will be sampled by the fax manager and stored as a digitised audio sample file in the faxes directory. This can be replayed by double-clicking on the file.

If, however, FaxPack detects a fax tone on the line, it will activate fax reception instead. This is all delightfully simple to use and works very well in practice. You do need to have enough spare room on your hard disc for the incoming messages, though at around 570K per minute most hard discs have enough room for quite a few messages. At present the only indication the caller has of a full hard disc is that FaxPack will hang up, but this is no worse than an answering machine tape coming to its end, and CC is looking at ways to improve the situation by indicating to the caller how much time is available.

FILE TRANSFER

Of no less value is the file transfer facility. The fax transmission application, *PrinterFP*, now has a *File transfer* option on its menu; if this is selected, then when a fax is transmitted FaxPack will attempt to establish contact with another FaxPack at the other end. If it cannot, the fax is sent in the usual way, but if it can, then the data is sent as an ASCII file with full error correction and data compression. Thus FaxPack gives you complete flexibility to use voice, fax and electronic file transfer over one line - the ultimate office communications solution.

Files appear in the destination fax directory as exact copies of the original, with the correct filetype. As you might expect, transfer is much faster than for a conventional fax; for example, a 4-page Ovation document sent as a fax took 5¼ minutes, while the same document transferred to another FaxPack as an Ovation file took just 30 seconds. The data transfer rate depends on the nature of the data (i.e. the amount of compression possible), but will average around 2K per second, with a worst case of just over 1K for raw data. Complete directories can be sent with the same ease as single files, just by dropping them onto the PrinterFP icon. In the tests I carried out, files received at the other end were all perfect byte-for-byte copies of the originals.

REMOTE LOG ON

As if this were not useful enough, it is possible, by using star commands, to log on to a remote FaxPack, list the files in a particular directory, and download any files or sub-directories you require. By default this will be the faxes directory (with a built-in filter to prevent you from moving upwards through the directory structure), but for greater security you can tell your system to recognise specified FaxPack serial numbers only, and to allow them access only to a nominated directory. This would enable you to set up a network of FaxPacks in an organisation which could all log on to a host machine or to each other, while denying access to outsiders apart from the straightforward fax and file transfer functions.

One criticism I have of FaxPack, and this applies particularly to the remote log on facility, is that the remote station has no idea what actions the caller is performing. Even when the call is finished, if the caller has loaded a file there is no way of knowing that this has been done. Some kind of status window would be useful showing what is going on, and in fact CC is hoping to include a full status window in later versions, showing among other things who is calling and what they are doing. This would also apply to fax reception so you would have a clearer idea of the situation at all times.

CONCLUSIONS

The above criticism apart, however, I find FaxPack as a whole probably the most useful item of equipment I have added to my Archimedes over the years. It offers very nearly a complete solution to my whole office comms requirement - the only thing missing is the ability to dial a voice number and lift the handset for me or activate a microphone when the call is connected. I'm sure that CC will include this if and when they can!

Product	*FaxPack*
Supplier	*Computer Concepts* *Gaddesden Place,* *Hemel Hempstead,* *Herts HP2 6EX.* *Tel. 0442 63933* *Fax 0442 231632*
Price	*£351.32 inc. VAT*

Quick Index

David Spencer lends budding authors a helping hand with this simple index generator.

Unless you have a DTP package with index generation built in, indexing even the shortest of booklets can be a nightmare. All too often you see books and manuals either without indexes, or with very sparse ones - simple for the author but a pain for the reader. The application *QIndex* presented here aims to make indexing simpler by taking a file that lists the desired index page-by-page and converting it into a proper alphabetical index that can be imported into any DTP package, word processor or text editor.

USING QINDEX

Start by typing in the listing given below and saving it to disc under the name *QIndex*. As listed the program is stand-alone, but you may want to package it in an application directory and create a fancy icon to tidy things up a bit.

QIndex takes as its input a special file that lists on a page-by-page basis the words that are to appear in the index, and this must be created using *Edit* or similar as described below. Before starting though, make sure that the document being indexed is in its final form so that the pagination will not change. When you're sure everything is alright take a printed copy of the manuscript and go through page-by-page marking the words that should appear in the index.

When all the words have been marked, the input file can be created. The format of the file should be a page number preceded by an '=' sign followed by the index entries for that page, one per line. This should be repeated for each page. A sample file is shown in figure 1. It is a wise idea to start every entry with a capital, not just for appearance, but also to ensure the index is sorted correctly, otherwise lower case entries would appear after all the upper case ones. If a page has no entries then it can be omitted. Incidentally, if an entry starts with an '=', this must be replaced with '==' to prevent it being read as a page number. The '==' will be converted to '=' in the final index, and also leading and trailing spaces will be stripped off entries. Should the document's pagination change at any time, the input file can be updated simply by moving the position of the page numbers, as the word order should not have changed.

```
=1
Cambridge
Archimedes
Acorn
RISC Developments
=2
Computer
Electronic
CPU
Memory
ROM
RAM
```

Figure 1. A sample input file

Once the input file has been finished you should save it in the current directory and run *QIndex* by double-clicking on it. You are then prompted to enter the filename of the input file and the name you wish to use for the output file. After the program has run, which can take a minute or more for long files, the index file is saved with your chosen name. This file, the exact format of which can be changed as described below, contains the entries listed in alphabetical order followed by a list of pages on which that word appears. This file can be pasted into just about any DTP package with only a bit of formatting needed to produce the final index.

CUSTOMISING QINDEX

To make *QIndex* as flexible as possible, it can be customised to some extent by changing lines 80 to 130. The variables *sep1$* to *sep4$* control the formatting. *sep1$* is used to separate the entry from the first page number and is a tab by default. *sep2$* is used between two page numbers, *sep3$* separates the start and end of a range of pages, for example 30-40, and *sep4$* (a linefeed by default) terminates each line. Finally, the setting of *range%* determines whether a word that appears on a number of consecutive pages should be listed as being on each page, such as 10, 11, 12 or as a range of pages (10-12). The range format is used if *range%* is set to TRUE.

HOW IT WORKS

The operations of merging entries and sorting them are combined into a single process using a technique known as a *Monkey Puzzle Sort*. With this method the words are entered into a data structure called a *Binary Sequence Search Tree (BSST)*. A BSST is a binary tree in which all the nodes in the left-hand subtree of a particular node are less than (in our case alphabetically before) the node itself, and all the nodes in the right-hand subtree are greater than the node. Each node of the tree contains the word itself plus a bitmap indicating for each page whether the word appears on it or not. The words are then written to the output file by a symmetric traversal of the BSST in which the routine is called recursively to output the left subtree of a node followed by the node itself and finally the right subtree. This inherently sorts the words into order as they are output.

If you want to understand the working of the program better, and in particular BSSTs, then any decent computer science book covering data structures should have sufficient details to give you a clear understanding of the methods involved.

EXTENDING QINDEX

This month's magazine disc includes a version of *QIndex* that is packaged up in Acorn's FrontEnd environment, allowing it to multi-task and to enable files to be dragged in and out.

```
   10 REM           >QIndex
   20 REM Program   Index Generator
   30 REM Author    David Spencer
   40 REM Version   A 1.0
   50 REM RISC User March 1993
   60 REM Program   Subject to Copyright
   70 :
   80 sep1$=CHR$9
   90 sep2$=", "
  100 sep3$="-"
  110 sep4$=CHR$10
  120 maxpages%=512
  130 range%=TRUE
  140 :
  150 maxmem%=65536
  160 DIM mem% maxmem%
  170 pageflags%=(maxpages%+7) DIV 8
  180 head%=mem%:!head%=0
  190 free%=mem%+4
  200 src%=0:dst%=0
  210 ON ERROR PROCerror:END
  220 INPUT "Source file : "source$
  230 src%=OPENIN source$
  240 IF src%=0 ERROR 256,"Cannot open s
ource file"
  250 INPUT "Destination file : "dest$
  260 dst%=OPENOUT dest$
  270 IF dst%=0 ERROR 256, "Cannot creat
e destination file"
  280 page%=0
  290 SYS "Hourglass_On"
  300 REPEAT
  310 PROCdoline
  320 UNTIL EOF#src%
  330 PROCwriteindex(!head%)
  340 CLOSE#src%:CLOSE#dst%
  350 OSCLI "SetType "+dest$+" Text"
  360 SYS "Hourglass_Off"
  370 END
  380 :
  390 DEF PROCerror
  400 ON ERROR OFF
  410 SYS "Hourglass_Smash"
  420 PRINT REPORT$;
  430 IF ERR<>256 PRINT " at line "+STR$
ERL ELSE PRINT
  440 IF src% CLOSE#src%
  450 IF dst% CLOSE#dst%
  460 ENDPROC
  470 :
  480 DEF PROCdoline
  490 line$=FNgetline
  500 IF line$<>"" THEN
  510 IF ASC(LEFT$(line$,1))=127 page%=F
Nnewpage(line$) ELSE PROCaddword(head%,l
ine$)
  520 ENDIF
  530 ENDPROC
  540 :
  550 DEF FNgetline
  560 REPEAT
  570 l$=""
  580 REPEAT
  590 char%=BGET#src%
```

THERE ARE TIMES WHEN A MOUSE IS A REAL HANDFUL!

A mouse is great as a pointing device, but when it comes to freehand drawing in art packages, accurately tracing drawings, or mapping contours, etc., it can prove a real handicap. The TechSoft HANDIPAD digitizing tablet is an absolute device. Unlike a mouse, the puck's position on the tablet always corresponds to the cursor position on screen. The puck has cross hairs for accurate tracing. Alternatively, the pen-like stylus can be used to allow a much more natural drawing action, far better for artistic and freehand work. The stylish Handipad has a 305x305mm active area, transparent overlay sheet to place drawings under, and comes complete with mains power supply, puck, stylus and serial cable. (Makes a great mouse mat too!)

TECHSOFT HANDIPAD

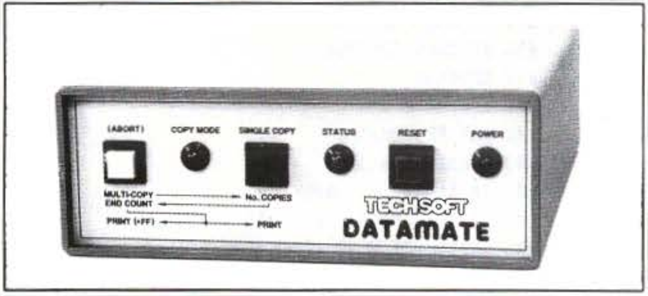
Archimedes Compatible *The mouse emulation software module provided is compatible with most software applications. The module allows both mouse and tablet to be active (by simply moving the puck off the active area the mouse re-gains control). If a small drawing is to be traced, clicking either side of the drawing with the fourth puck button "zooms" this area to fill the screen.*

TECHSOFT UK Ltd., Old School Lane, Erryrys, Mold, Clwyd,
CH7 4DA Tel: 082 43 318 Fax : 082 43 564

TECHSOFT HANDIPAD £175 +£8 p&p +VAT

Is Your Printer/Plotter Slowing Down Your Arc?

TECHSOFT DATAMATE



Technical: *Data Capacity 1, 2, 4 or 8Mb (upgradable) : One Centronics input/output : Single copy mode : Multi-copy Mode : Selectable auto form feed between copies: Self test mode: External mains power supply.*

TECHSOFT UK Ltd., Old School Lane, Erryrys, Mold, Clwyd,
CH7 4DA Tel: 082 43 318 Fax : 082 43 564

ARC PRODUCTIVITY TOOL

Datamate is an external buffer, an "in between" device which accepts data at high speed from your computer, then releases it to your printer/plotter as required. Thus your computer is freed as quickly as possible whilst your printer/plotter carries on independently, allowing you to move on to the next job as soon as possible. The multi-copy mode allows any number of copies to be printed, independent of the computer. The single copy mode is ideal for plotters / vinyl cutting / engraving, etc. Datamate is available in 1, 2, 4 and massive 8Mb versions, thus coping easily with even the most data intensive applications, DTP, spreadsheets, databases, CAD, etc. In short, Datamate is the ideal companion for all Centronics output devices.

SIZE	1Mb	2Mb	4Mb	8Mb
PRICE	£195	£230	£295	£425

All prices + £8 p&p. + VAT

```
  600 IF char%>=32 l$+=CHR$char%
  610 UNTIL char%<32 OR EOF#src%
  620 WHILE LEFT$(l$,1)=" "
  630 l$=RIGHT$(l$,LENl$-1)
  640 ENDWHILE
  650 WHILE RIGHT$(l$,1)=" "
  660 l$=LEFT$(l$)
  670 ENDWHILE
  680 UNTIL l$<>"" OR EOF#src%
  690 IF LEFT$(l$,1)="=" THEN
  700 IF MID$(l$,2,1)="=" THEN l$=RIGHT$
(l$,LENl$-1) ELSE l$=CHR$127+RIGHT$(l$,L
ENl$-1)
  710 ENDIF
  720 =l$
  730 :
  740 DEF FNnewpage(l$)
  750 p%=VAL(RIGHT$(l$,LENl$-1))
  760 IF p%=0 ERROR 256,"Bad page"
  770 IF p%>maxpages% ERROR 256,"Page nu
mber too big"
  780 =p%
  790 :
  800 DEF PROCaddword(ptr%,l$)
  810 LOCAL word$
  820 IF !ptr%=0 THEN
  830 !ptr%=FNnewword(l$)
  840 ELSE
  850 ptr%=!ptr%
  860 word$=$(ptr%+pageflags%+8)
  870 CASE TRUE OF
  880 WHEN l$<word$:PROCaddword(ptr%,l$)
  890 WHEN l$=word$:PROCaddpage(ptr%+8,p
age%)
  900 WHEN l$>word$:PROCaddword(ptr%+4,l
$)
  910 ENDCASE
  920 ENDIF
  930 ENDPROC
  940 :
  950 DEF FNnewword(l$)
  960 LOCAL blk%
  970 blk%=FNgetmem(LENl$+pageflags%+9)
  980 $blk%=STRING$(pageflags%+8,CHR$0)
  990 $(blk%+pageflags%+8)=l$
 1000 PROCaddpage(blk%+8,page%)
 1010 =blk%
 1020 :
 1030 DEF PROCaddpage(ptr%,p%)
 1040 IF p%=0 ERROR 256,"No page number"
 1050 ptr%+=(p%-1) DIV 8
 1060 ?ptr%=?ptr% OR (1<<((p%-1) MOD 8))
 1070 ENDPROC
 1080 :
 1090 DEF FNgetmem(len%)
 1100 LOCAL x%
 1110 x%=free%:free%+=len%
 1120 IF free%-mem% > maxmem% ERROR 256,
"Out of memory"
 1130 =x%
 1140 :
 1150 DEF PROCwriteindex(ptr%)
 1160 IF ptr% THEN
 1170 PROCwriteindex(!ptr%)
 1180 PROCoutputentry(ptr%)
 1190 PROCwriteindex(ptr%!4)
 1200 ENDIF
 1210 ENDPROC
 1220 :
 1230 DEF PROCoutputentry(ptr%)
 1240 IF ptr%<>0 THEN
 1250 BPUT#dst%,$(ptr%+8+pageflags%);
 1260 BPUT#dst%,sep1$;
 1270 fp%=0:prefix$=""
 1280 REPEAT
 1290 REPEAT
 1300 fp%+=1
 1310 UNTIL fp%>maxpages% OR FNcheckpage
(ptr%,fp%)
 1320 lp%=fp%
 1330 REPEAT
 1340 lp%+=1
 1350 UNTIL lp%>maxpages% OR (FNcheckpag
e(ptr%,lp%)=0)
 1360 lp%-=1
 1370 IF fp%<=maxpages% THEN
 1380 BPUT#dst%,prefix$;
 1390 IF fp%=lp% THEN
 1400 BPUT#dst%,STR$fp%;
 1410 prefix$=sep2$
 1420 ELSE
 1430 IF range% THEN
 1440 BPUT#dst%,STR$fp%+sep3$;
 1450 BPUT#dst%,STR$lp%;
 1460 prefix$=sep2$
 1470 ELSE
 1480 prefix$=""
 1490 FOR p%=fp% TO lp%
 1500 BPUT#dst%,prefix$+STR$p%;
 1510 prefix$=sep2$
 1520 NEXT
 1530 ENDIF
 1540 ENDIF
 1550 ENDIF
 1560 fp%=lp%+1
 1570 UNTIL fp%>maxpages%
 1580 BPUT#dst%,sep4$;
 1590 ENDIF
 1600 ENDPROC
 1610 :
 1620 DEF FNcheckpage(ptr%,p%)
 1630 ptr%+=(8+(p%-1)DIV8)
 1640 =?ptr% AND (1<<((p%-1) MOD
8))
```

Aleph's PC Cards Revisited

David Spencer keeps up to date on the PC cards from Aleph One.

Since RISC User reviewed the Aleph One 386SX PC card back in Volume 5 Issue 7, the company has released a 25MHz 486SLC version of this product, which allows your Arc to run as a full-speed PC, with either 1 or 4Mbytes of RAM. Aleph have also launched the promised Windows screen drivers. In this review we will assess these new products and look at other future developments.

Before starting, it is worth looking at the differences between members of the 386 and 486 families of processors. The original 386DX is a full-blown 32-bit processor with 32-bit external bus. The 386SX as used by Aleph on its 386 card is a version of the 386 with a 16-bit external bus, but otherwise totally compatible.

The 486DX is a 386DX with a few extra instructions, an 8K on-chip cache and a built-in maths co-processor. The 486SX is the same as the 486DX but without the co-processor (though a co-processor can be added externally). Both have a 32-bit bus. The 486SLC used by Aleph is a special processor manufactured by Cyrix. It includes the 486 instructions, and a cache, but only 1K in size, and like the SX version has an interface to an external co-processor rather than a built-in one. Unlike the SX version, the 486SLC only has a 16-bit external bus. This has the big advantage that the chip can be made pin compatible with the 386SX.

THE ALEPH CARD

The 486 card looks identical to the 386 card with the exception of the processor itself, and indeed that is the only difference. However, don't expect to be able to upgrade from the 386 to 486 version, as the processor chip is surface mount soldered. The card is a half-width design making extensive use of surface mount technology. The back of the card carries a standard PC printer port and a 9-pin serial port, more of which later.

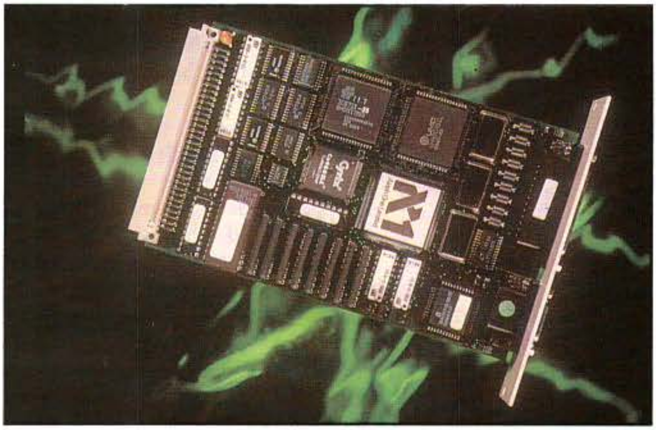
The memory consists of eight zig-zag RAM chips which can be either one or four megabit devices. The RAM is socketed so that a 1Mb card can be upgraded easily. To the left of the processor is a socket for a 387SX co-processor.

When 1Mb of RAM is installed, 640K is available to the user. The other 384K is effectively lost because it is mapped out by the likes of system code and screen memory. This 'feature' is not unique to the Aleph card - it is a property of all PCs. On a 4Mb card, the basic 640K is supplemented with 3072K of Extended Memory. For programs to make use of this extra memory an extended memory manager such as HIMEM.SYS which is supplied with Windows and DOS 5 must be installed. Some older applications require a different flavour of extra memory - Expanded Memory, as provided by the latest versions of the PC Emulator. An application called EMM386 supplied with HIMEM.SYS allows a block of the Extended Memory to mimic Expanded Memory.

IN USE

Installing the card is no different than for any other podule, and takes only a few minutes. The card can be fitted to any full size Archimedes or externally to an A3000 if a metal case is added. For this review an A5000 was used. A vital point to note here is that the PC card can't provide features that the host machine isn't up to supporting. For example, only an A5000 can handle DOS 1.44Mb format discs, and VGA screen modes can only be used if you have a VGA or multisync monitor.

A requirement of the PC card is that you already have the PC Emulator version 1.6 or later. This avoids Aleph having to get involved in the problems of licensing DOS as it is supplied with the Emulator. A simple install application is supplied with the PC card which opens a window onto which you must drag your PC Emulator. You can then drag an application called !386PC back to your hard disc. This seems strange as this is a 486 card, but the same application is used for both 386 and 486 cards. Indeed, the card itself says 386 on the back. Before going any further you have to configure the system by editing a file called 'Config' within the 386PC application. Most of the options can be left unchanged, such as those that set the display type, but one very important line must be changed to tell the software that the board contains a 486 and not a 386. This is the only distinction between the two cards.



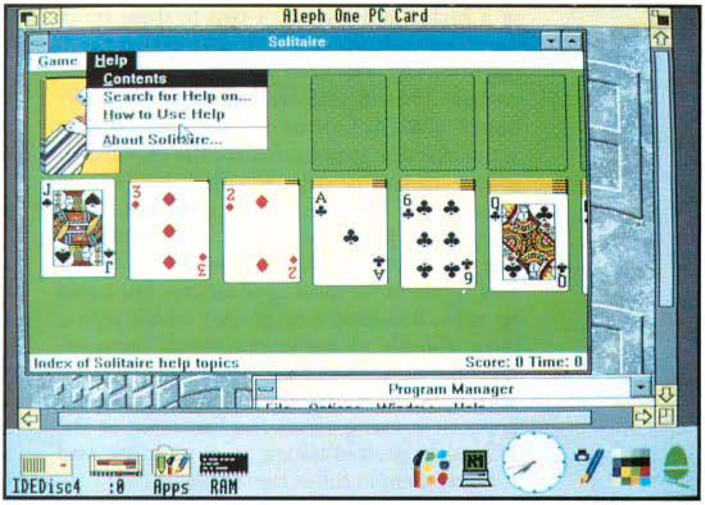
Aleph One's 486 card

Getting into the PC is very similar to using the PCEmulator. Running the 386PC application puts an icon on the icon bar and clicking on this starts the PC in a window. The *Single task* and *Freeze* options of the Emulator are available, as are the features to save the PC screen as a sprite or text. The installation process automatically picks up any DOS partition on the hard disc so that all the installed software (including DOS itself) will appear just as it did under the Emulator. One point to note though is that to emulate a PC mouse you must use a new version of the driver AMOUSE.COM supplied with the card. This will then allow the mouse to work with both the PC card and the Emulator.

The PC card will work with any version of MS-DOS or DR DOS but I decided to use the latest version of MS-DOS - version 5. To give me room to test some real software I also created a 40Mbyte DOS partition. Big mistake! Whilst the PC card and Emulator both support this perfectly, DOSFS built into RISC OS 3 can't cope with a partition over 32Mbytes. Any bigger and you can't access the DOS files directly from the Desktop.

PERFORMANCE

The vital question is *How fast is the 486 card?*. To judge this the *SysInfo* tool from the PC Norton utilities suite was used. This gives speed indexes for processor power and disc accesses and then combines them to give an overall performance index. The indexes are scaled such that an original 8088-based IBM PC/XT running at 4.77MHz scores 1. Table 1 gives the results for the 386 and 486 cards, the Emulator and real 386 and 486 machines. When interpreting the figures you should bear some points in mind.



Microsoft windows in a window

Firstly, the Emulator is running on the fastest Archimedes available. On older non-ARM3 machines the Emulator would suffer a considerable reduction in performance, whilst the speed of the PC cards would be almost unchanged. Secondly, the real PCs both used DX processors, the 386 with an external cache, and so you would expect them to be faster than the SX and SLC versions. However, these PCs are typical of what may be purchased at reasonable cost these days. Thirdly, the 386 card was the original version running at 20MHz. Aleph are now shipping 25MHz versions at the same price. A further point is that the disc speed indexes for the PC cards and Emulator are slightly higher than they should be because the full test could not be performed due to the fact that disc transfers are handled by the Arc side and not the PC.

System	Processor Index	Disc Index	Overall Index	Disc transfer rate (kbs/s)
Emulator	2.7	8.0	4.2	886
20MHz 386 Card	10.0	3.9	7.9	191
25MHz 486 Card	39.8	3.9	27.8	191
40MHz 386DX *	43.2	8.6	31.2	978
33MHz 486DX	71.4	8.4	50.3	1009
* with 128K external cache				

Comparative Norton speed indexes and disc transfer rates

The results are not unsurprising. The Emulator is slow, and the 486 card is about four times the speed of the original 20MHz 386 version. This difference is probably more than would be seen in real use, as benchmarks tend to over-emphasise the effect of a cache, and a ratio of two to three times the speed between the 386 and 486 is more realistic. The 486 card falls just short of the cached 386DX and well short of the full-blown 486DX. One interesting point to note is that the disc speed index for the PC cards is lower than for the Emulator. This is presumably because all the data has to be transferred from disc to the Arc's memory, and then into the PC's memory. This won't be a problem for most applications, but could be with Windows (see below) which uses a large disc file to implement virtual memory. One perhaps surprising point is that there was very little difference in performance between running either the Emulator or the PC cards multi-tasking in a window and running them in full-screen mode.

The speed indexes aren't quite the whole story though. Just as disc data has to be moved from PC memory to Arc memory, so does the screen contents. This leads to a relatively slow screen update speed. Most of the time this will not be noticeable, but when moving a mouse pointer around, or selecting a block of text by dragging, it is easy to get ahead of yourself as the screen takes a while to update. Fast arcade games would also suffer similar problems.

WINDOWS

For anyone who is not au-fait with PCs, Windows is the PC equivalent of the RISC OS Desktop, offering a similar set of features but not necessarily implemented in the same way. The latest version of Windows, 3.1, can only run on a 80286 or higher and therefore cannot run under the Emulator. This is in fact rather academic because the Emulator would be far too slow anyway. To use Windows properly, it is almost essential to have the full 4Mbytes of RAM on the PC card.

Windows is installed from seven discs, and this is where non-A5000 owners will grind to a halt because Windows is only supplied on high density discs. It is not the end of the world though because Microsoft can supply it on low-density discs by special request. In a similar vein, Windows expects a VGA display. If you only have a low-resolution monitor you will need to obtain a set of public domain CGA drivers.

When installing Windows, you have the option of an express installation where it makes all the choices, or a more detailed installation where you choose options manually. This latter approach must be used for the PC cards as you have to select 'VGA (Version 3.0)' for the screen driver, and the express installation selects plain old 'VGA'. Unfortunately, having selected the manual installation you have to respond to many questions in addition to the screen driver, such as which applications to pre-start. This could prove rather confusing for new users. As I also discovered, you need at least version 1.01 of the Aleph software to use Windows, otherwise it crashes rather unceremoniously.

Once installed, Windows runs exactly as it would on a PC, though it is at this stage that you realise how much slicker the RISC OS Desktop is in its operation. The first thing I did was run Minesweeper - a highly addictive game supplied with Windows. All went well until I pressed the middle mouse button at which point it switched back to multi-tasking mode from full-screen mode, rather than doing what I expected. Why it did this is simple. The average PC has a two-button mouse and both the PC Emulator and the PC cards use the spare middle button to switch back to multitasking mode. However, some PC applications, including Minesweeper can make use of a three button mouse if fitted. Aleph have promised to implement a three button mouse driver as an option in future versions of the software for the benefit of such applications.

Windows suffers more than other applications from the slow screen update of the PC card and to reduce this problem Aleph have developed a special screen driver for Windows that is available as an optional extra. Installing the driver involves copying two files into the Windows directory and changing a couple of lines in a configuration file. With the new drivers installed, the Archimedes takes over more of the redraw task, and Windows screen redraws are speeded up considerably - though not to the speed of a real PC. These optional drivers are high recommended.

PERIPHERAL PORTS

As mentioned earlier, the PC cards include their own printer and serial ports. This is necessary because older Archimedes do not support the full PC specification for these ports. In particular, older machines don't have a bi-directional printer port which is vital for PC dongles and peripherals such as scanners that connect to the printer port.

As well as the built-in printer port, the standard RISC OS printer stream can be used as a second printer port. In particular, this allows the PC to print to a network printer, or to a direct drive laser printer in Epson emulation mode. Currently there is no way of using the Arc's serial port as a second serial port for the PC. On reflection though, this isn't much of a problem because whilst most PCs have two serial ports, one is taken up by the mouse which is already catered for on the Arc.

FUTURE DEVELOPMENTS

Aleph One are very keen to tailor the PC cards to their customers' needs, and as such are working on a number of future enhancements. Further improved Windows drivers are planned which will speed up screen redraw by more than the current drivers. Disc caching using the Arc memory as a disc cache (or as a separate RAM disc) is also planned. Another plan is to make Arc podules available to the PC, which is particularly attractive for SCSI cards and specialist peripherals such as IEEE488 controllers. Very importantly, access to Ethernet and other networks will be provided via part of the Acorn AUN standard, allowing PC cards to attach to PC networks such as Novell. The future may also see the Arc's sound capabilities used to emulate popular add-on sound cards that many PC users fit.

As well as these software enhancements, Aleph are set to release a PC card for the A3020 and A4000 at the BETT show. More details of this can be found in the News pages in this issue.

CONCLUSION

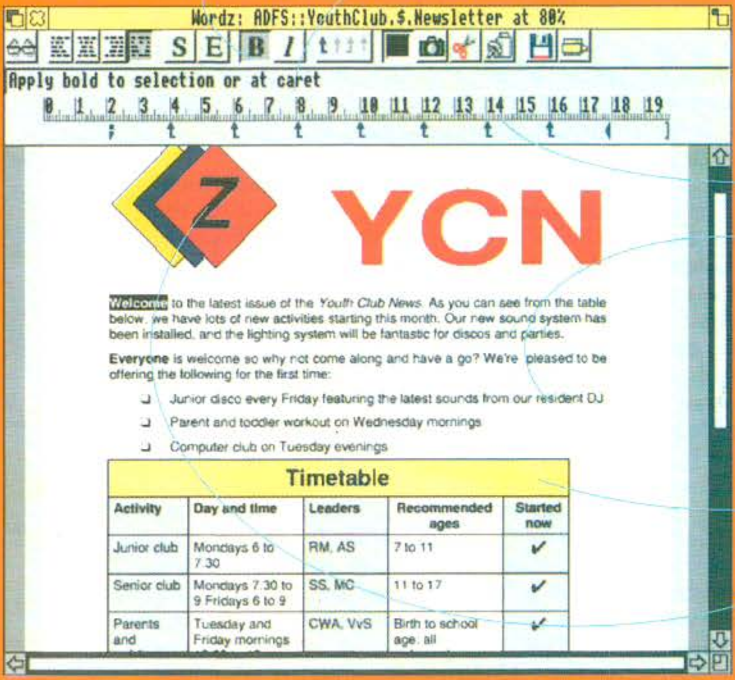
The ultimate question is "Should I buy one?". The 486 card certainly represents better value for money than the 386 version, but before buying you need to ask yourself a couple of questions. Firstly, do you use PC software enough to make the Emulator impractical, or do you use it so much that you would be better off with a real PC? After all, remember that a real PC offers features that the PC card can't, such as expansion slots and RAM upgrades beyond 4Mbytes. Secondly, is your host system good enough? As already mentioned, an A5000 is needed to get the full potential out of the PC card. An old 310 with a standard monitor isn't exactly going to do the card justice. However, if you feel you need a PC card and can justify the expense, the Aleph card is a very well built and professional peripheral, and the company can offer the support that is needed for a complex product such as this.

Prices (ex. VAT):

386 card (1Mbyte)	*£395.00*
386 card (4Mbyte)	*£495.00*
486 card (1Mbyte)	*£495.00*
486 card (4Mbyte)	*£595.00*
Maths co-processor	*£99.00*
Windows driver disc	*£25.00*

Supplier Aleph One
The Old Courthouse,
Bottisham,
Cambridge CB5 9BA.
Tel. 0223 811679
Fax 0223 812713

news from Colton Software



Apply bold to selection or at caret

Welcome to the latest issue of the *Youth Club News*. As you can see from the table below, we have lots of new activities starting this month. Our new sound system has been installed, and the lighting system will be fantastic for discos and parties.

Everyone is welcome so why not come along and have a go? We're pleased to be offering the following for the first time:

- ☐ Junior disco every Friday featuring the latest sounds from our resident DJ
- ☐ Parent and toddler workout on Wednesday mornings
- ☐ Computer club on Tuesday evenings

Timetable

Activity	Day and time	Leaders	Recommended ages	Started now
Junior club	Mondays 6 to 7.30	RM, AS	7 to 11	✓
Senior club	Mondays 7.30 to 9 Fridays 6 to 9	SS, MC	11 to 17	✓
Parents and	Tuesday and Friday mornings	CWA, VvS	Birth to school age: all	✓

At last, the word processor the Archimedes has been waiting for. A program that's so easy to use you'll be able to create great-looking documents the first time you use it. The facilities used most are in the *button bar*, and the *status line* gives you instant feedback. Just click and drag in the *ruler* to set margins and tabs; click on a button to cut and paste - it's that easy.

Wordz has all the features you'd expect from a state-of-the-art word processor. The powerful style editor gives you complete control over all aspects of your text; *font, spacing, margins,* and *colour*. Unparalleled control over *tables* including dragging to resize columns and rows. Speedy check-as-you-type or whole document spell checking. Import *pictures* and text from other programs, including PipeDream.

Wordz is the first of a family of programs which share the same easy user interface and include dynamic data linking. The spreadsheet Resultz will be available in mid-1993.

Wordz costs £99+VAT. *"Is it easy to use? It's falling-off-a-log easy to use."*

word"Z!™ ® ©

1993...4...

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Super-fast ARM3s

Neil Burgess looks at Ground Control's 35MHz ARM3.

There comes a time when people decide they want more, and computing power is no exception. Over the past six months, I had been thinking about buying an ARM3 upgrade for my machine, and after fitting RISC OS 3 I felt that the time had come. Recently, the prices of ARM3 upgrades have tumbled, and floating point co-processor sockets have become common, but at the Acorn User show this year Ground Control had its 35MHz ARM3 on display, so I decided to take the plunge and upgrade.

Most ARM3 processors run at 25MHz. The only way to up the speed of the ARM3 previously was to "clock up" the chip, which means running it at a faster speed than it was designed for. This method can create problems (a little like towing a standard Robin Reliant at 200mph!). The ARM3s which Ground Control is selling are official 35MHz chips commissioned by Acorn on a limited production run of 200, and they carry a gold top with 35 on it.

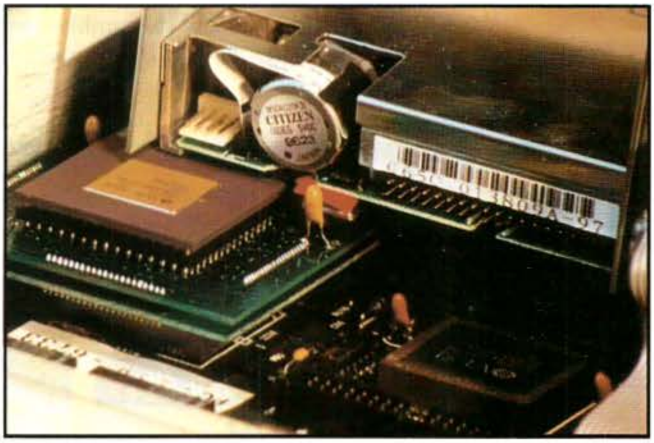
The upgrade for my A440/1 was fairly simple to carry out, if not a little nerve racking. The instruction sheet was clear, but generally, if you are nervous about removing the lid, get someone more experienced to do it, and if you own an A3000 you should get an Acorn approved service centre to fit the upgrade for you. Unfortunately the new A3010, A3020 and A4000s can't be upgraded with an ARM3.

	IntMath	GrafScrn
35MHz ARM3	0.05	0.46
25MHz ARM3	0.06	0.55
ARM250	0.19	1.63
ARM2	0.21	1.80

Table 1: PCW benchmark results (RISC OS 3)

The ARM3 itself is mounted, together with a 36MHz crystal and some other minor components, on a two layer PCB which is piggy-backed with another, which holds the PLCC connector. Because of the small size of the board, there should be no problems with other upgrades. A disc is supplied with a small utility for controlling the ARM3, but this doesn't need to be used with RISC OS 3 as cache control is built in (the cache is the part which gives the ARM3 its speed increase over the ARM2).

In use the ARM3 is a dream (see Table 1). RISC OS 3, which is slower than RISC OS 2, becomes very fast. Screen rendering in Draw is now much improved (about 4 times faster, depending on mode and what is being drawn), so much so that you don't fall asleep while complex clip art is loading. Global fills in Paint, sprite rotation and ray-tracing are all much faster, and so are high resolution/more colour screen modes. These speed enhancements alone make your Arc even more competitive in the DTP stakes. Add a much more useable PC Emulator, and you have got one FAST machine, compared to the one you were using half an hour ago. Even the Chocks Away extra missions are playable!



The ARM3 upgrade installed

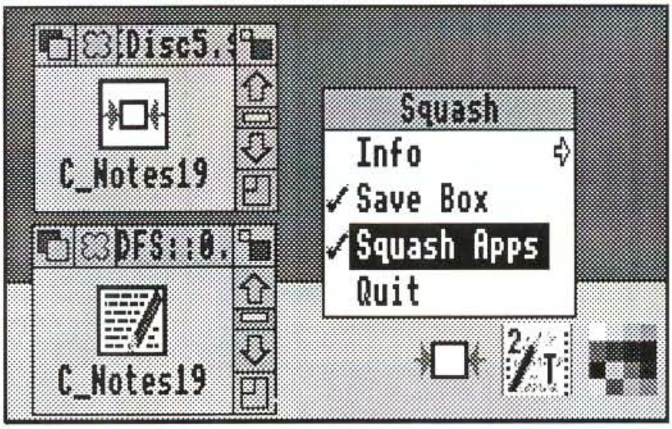
Almost everything is speeded up under ARM3 power, and some games even favour it. If you are becoming blasé about your machine, or just need more speed, then this is the upgrade for you, and as the benchmarks show, the 35MHz ARM3 is around 15% faster than the 25MHz version, and nearly 4 times as fast as an ARM2. The 35MHz ARM3 costs more than the 25MHz ARM3 (a typical 25MHz ARM3 upgrade costs around £200), but for the extra cash you do get extra speed.

Product *35MHz ARM3*
Supplier *Ground Control Electronics Ltd.*
Unit 7, Kingfisher Court,
Hanbridge Road, Newbury,
Berkshire RG14 5SJ
Tel. 0635 524008
Fax 0635 528115
Price *£250 inc. VAT and p&p*

Using Squash

Lee Calcraft looks at an application that can save megabytes of disc space - and it's all for free if you have RISC OS 3.

Squash is an excellent little application supplied on the RISC OS 3 Applications Disc 1. It can compress files of all types, it is very fast, and very powerful, achieving compression ratios in the same league as Computer Concepts' *Compression* and David Pilling's *SparkFS*. And, like these products (but unlike *jpeg* compressors), it is able fully to reinstate the compressed items.



Squashing a text file

The only real drawback of Squash when compared to its two commercial rivals is that it does not emulate Filer viewers. This means that you need to decompress a squashed file before running it, or dragging it to another application; but this is not a terrible hardship.

SQUASH IN USE

Squash is installed on the icon bar in the normal way by double-clicking on its icon in a Filer window. To compress a file, you simply drag it to the icon. A save box then appears containing the same name as the file dragged. You may edit this if you wish and drag it to a suitable destination, or simply click on OK - in which case the squashed file will replace the original.

To decompress a file you can either drag it back to the Squash icon, or simply double-click on it. This latter is very quick and easy, and replaces the squashed version with the original - complete with filetype and date stamp (this data is stored within the compressed image). Moreover you do not need the Squash application installed for the process, though the operating system does need to have 'seen' the Squash application.

DIRECTORIES AND APPLICATIONS

If you drag a directory or an application to Squash rather than a simple file, it puts up a dialogue box from where you can opt to *Compress* or *Decompress*. When you click on OK it will work its way through the directory either compressing or decompressing all files and resaving them with the same name.

There is a misnamed option on the icon bar menu called *Squash apps*. In fact this means "Squash the contents of subdirectories". If this is set then the contents of all subdirectories within the dragged directory will also be processed. Squash makes no attempt to squash directories themselves - they still take up 2K of disc space whether "Compressed" or not. This means that directory structures remain completely intact even after recursive compression.

You will however lose the use of sprites in application icons once you have rebooted (and therefore cleared the sprite area) - though of course all will be restored on decompression. In fact if you open a directory containing applications with compressed *!Sprites* files you will get *Bad Sprites file* error messages - which is a little annoying. It may be best not to compress *!Sprites* files in applications. They are usually not very large in any case.

PERFORMANCE

Squash uses the powerful 12-bit LZW algorithm which turns in a good performance in terms of both speed and compression ratios. The time taken by Squash to compress or decompress files appears to be largely independent of their native filetype, though as you would expect the file size is an important determinant (see table 1). With an ARM3 Squash takes around 1 second to compress files of 20K in size. With the cache off (and therefore approximately simulating an ARM2) it takes between 2 and 3 times longer.

Decompression is some 2-3 times faster than compression, while files of 100K in size took about twice as long as 20K files for both compression and decompression. Files of 300K took around 4 times as long as for a 20K file.

The compression ratio is usually a more important factor than the speed of processing, and again Squash performs quite reasonably here. As you might expect, the compression ratio achieved was highly dependent on the type of file - or more precisely on the amount of redundancy that Squash could discover in the file (see table 2).

Sprite files scored the highest ratio, turning in results around 35% (i.e. a 100K sprite takes up just 35K of disc space). Some sprites which I tested, although containing full dithered images, reduced down to just 20% of their original size.

Text files were generally reduced in size by about a half. Basic files generally performed less well, but you can considerably improve the result here by converting the Basic program to a text file (preferably with no line numbers) before compression.

As a different kind of indicator of performance, I have just saved some 8Mb of disc space (more than doubling the amount of free space on my hard disc) by dragging five directories to the Squash icon. The biggest savings were on directories of illustrations (stored as sprites), large documents and C source backups.

USING THE COMMAND LINE

Squash can also be used directly from the command line. Unfortunately this facility requires the presence of a utility of the same name. This is supplied as a file within the !Squash application directory, and needs to be copied to your library (or your current) directory.

It is easy to use. Just type:

```
Squash name
```

at the star prompt, where *name* is the name of the file to be squashed or unsquashed. The processed file will be saved in place of the source. Alternatively you can supply two file names - the first for the source, and the second for the destination.

	Cache On		Cache Off	
	Comp	Decomp	Comp	Decomp
20K	1.0	0.4	2.5	1.0
100K	1.9	0.9	5.0	1.3
300K	4.2	1.8	12.5	3.1

Compression/Decompression times in seconds for different sized files using an ARM3 in Desktop mode 12.

Table 1

Text	49%
Basic	70%
Sprite	34%
Draw file	60%
Ovation	69%
Impression text file	58%

Size of compressed file expressed as a percentage of the original. Sprite file performance varies wildly with file content. The sprite and Draw file are *PaintDemo* and *DrawDemo* from Apps 2. Impression results are for text files within document Chapter directories.

Table 2

This is ideal for Obey files used for creating backups. Instead of using a set of commands like the following:

```
Copy adfs::HD4.$.MyProg adfs::0.$.ProgBk
```

you could use:

```
Squash adfs::HD4.$.MyProg adfs::0.$.ProgBk
```

Note though that wildcarded names cannot be used.

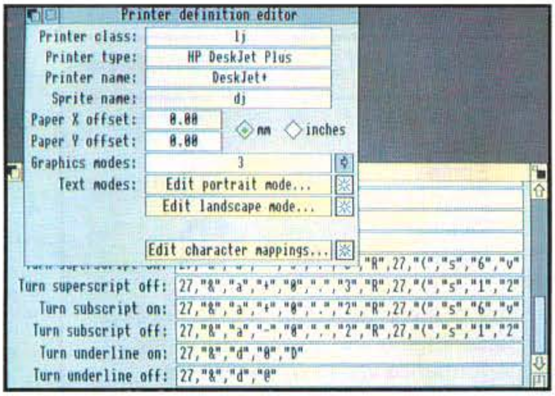
To summarise: Squash is a powerful and easy to use application - the fact that it comes free with RISC OS 3 should make it very popular both among hard disc and floppy-only users.

RISC USER DISC CONTENTS March 1993

Quick Index

An enhanced version of the simple index generator in the magazine which makes use of Acorn's FrontEnd module. This version multi-tasks in the Desktop and allows indexes to be built up quickly and easily for any document. It works by taking a specially created file containing details of index entries for each page, and making up a file containing an alphabetic index. This can then be printed, or imported into a DTP package for typesetting.

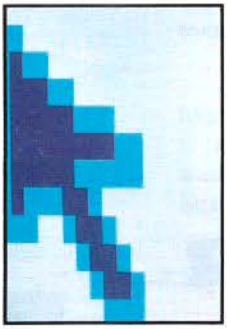
The 80 Column: RISC OS 3 Printer Files for the HP DeskJet Plus



Printer definition editor

Printer class: lj
Printer type: HP DeskJet Plus
Printer name: DeskJet+
Sprite name: dj
Paper X offset: 0.00
Paper Y offset: 0.00
◈ mm ◇ inches
Graphics modes: 3
Text modes: Edit portrait mode...
Edit landscape mode...
Edit character mappings...
Turn superscript on: ,"R",27,"(","s","6","v"
Turn superscript off: 27,"&","a","+","0",".","3","R",27,"(","s","1","2"
Turn subscript on: 27,"&","a","+","0",".","2","R",27,"(","s","6","v"
Turn subscript off: 27,"&","a","-","0",".","2","R",27,"(","s","1","2"
Turn underline on: 27,"&","d","0","D"
Turn underline off: 27,"&","d","@"

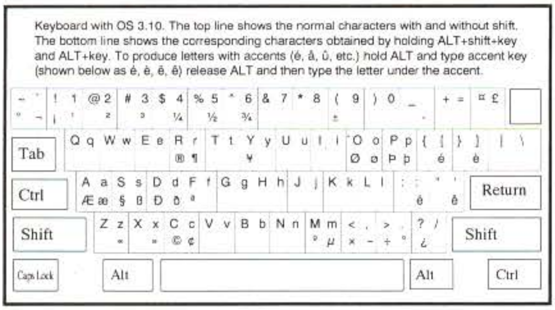
Files for use with Acorn's RISC OS 3 Printer Manager to improve the operation of the Manager with the Hewlett Packard DeskJet Plus printer. Files included are: a new printer definition file for the DeskJet, a new Messages file to provide amended printer codes, two Ovation style sheets, and new sprite definition files to make the icon bar icon look like the DeskJet.



Pointer Sprite

A sprite file containing a mode 12 sprite of the mouse pointer, which you can use to add the pointer to any screenshots taken by Paint. The process of adding the pointer is described in the article Adding the Pointer to Screendumps.

Keyboard Draw File

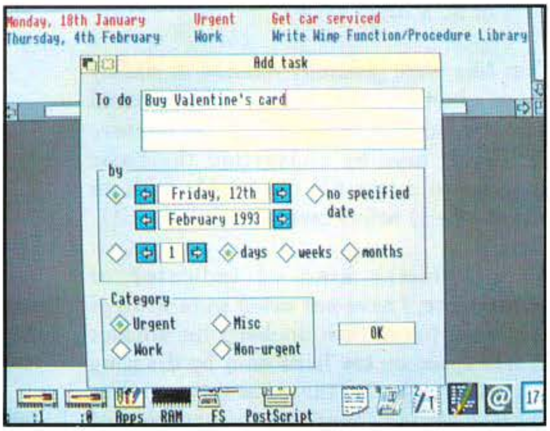


Keyboard with OS 3.10. The top line shows the normal characters with and without shift. The bottom line shows the corresponding characters obtained by holding ALT+shift+key and ALT+key. To produce letters with accents (é, å, û, etc.) hold ALT and type accent key (shown below as é, è, ë, ê) release ALT and then type the letter under the accent.

This is a Draw file (as described in Hints and Tips) containing a diagram of the keyboard, indicating which key shortcuts are available under RISC OS 3 for international characters. For example, Alt-C produces the copyright symbol, which otherwise would have to be entered by keying Alt-169 on the numeric keyboard.

ADDITIONAL ITEMS DESCRIBED IN THE MAGAZINE

Harry: Personal Organiser



Monday, 18th January Urgent Get car serviced
Thursday, 4th February Work Write Wimp Function/Procedure Library

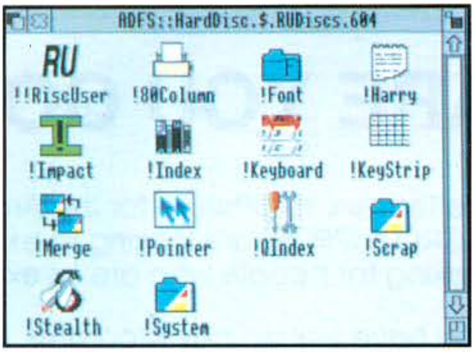
Add task

To do Buy Valentine's card

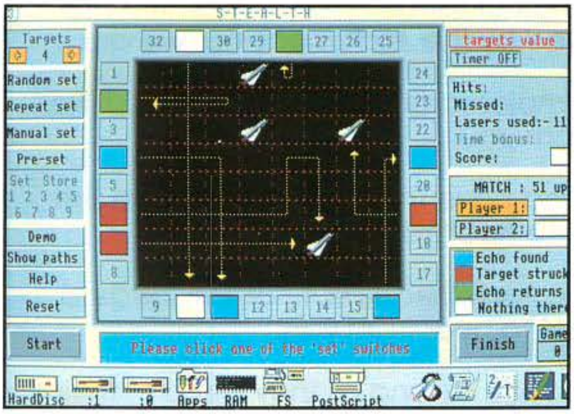
by
◈ Friday, 12th February 1993 ◇ no specified date
◇ 1 ◈ days ◇ weeks ◇ months

Category
◈ Urgent ◇ Misc
◇ Work ◇ Non-urgent

Harry is a multi-tasking 'to-do-list' manager which allows you to keep a list of tasks you should perform, along with information such as the deadline for each task, the type of each task (e.g. Work, Urgent etc.), and its description. Alarms can also be set to remind you of deadlines whenever you run the application. Organise your life more efficiently with a little help from your Archimedes.



The Game of Stealth



Stealth is a Desktop game of logic and deduction, in which you must discover the locations of a number of hidden targets in a twodimensional grid. You do this by firing lasers into the grid and working out the positions from the way the lasers return: i.e. reflected, absorbed or left untouched. A most addictive game with enough user options to keep the interest level high.

BONUS ITEMS

Garamond Outline Font

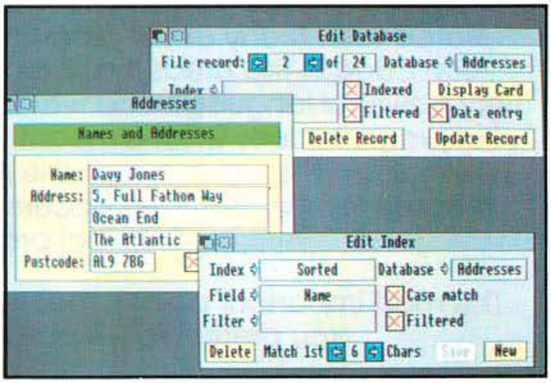
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
.,<>/?'";:[]{}\|-_=+£¤

A beautiful outline font which is particularly suited to headlines and large point sizes. Both the normal face and the italic versions are included, and the font is fully scaffolded and hinted.

ArcScan Data

ArcScan indexes for this issue of RISC User and BEEBUG Vol.11 No.8.

Impact! Database Demo

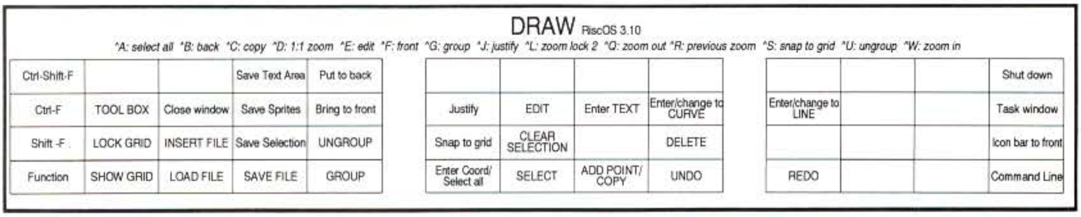


Name: Davy Jones
Address: 5, Full Fathom Way
Ocean End
The Atlantic
Postcode: AL9 7B6

A working demo version of the Impact! database from Circle Software, reviewed in this issue. If you decide you would like to buy the product, then you can simply ring up Circle Software for a code to transform this demo into a full working version, so you don't have to wait for the post.

RISC OS 3 Draw KeyStrip

An Impression file containing a function keystrip for the RISC OS 3 version of Draw. All the key shortcuts are detailed, not just the function keys, and it provides an invaluable aid when using Draw.



DRAW RiscOS 3.10

^A: select all ^B: back ^C: copy ^D: 1:1 zoom ^E: edit ^F: front ^G: group ^J: justify ^L: zoom lock 2 ^Q: zoom out ^R: previous zoom ^S: snap to grid ^U: ungroup ^W: zoom in

Ctrl-Shift-F			Save Text Area	Put to back								Shut down
Ctrl-F	TOOL BOX	Close window	Save Sprites	Bring to front	Justify	EDIT	Enter TEXT	Enter/change to CURVE	Enter/change to LINE			Task window
Shift -F	LOCK GRID	INSERT FILE	Save Selection	UNGROUP	Snap to grid	CLEAR SELECTION		DELETE				Icon bar to front
Function	SHOW GRID	LOAD FILE	SAVE FILE	GROUP	Enter Coord/ Select all	SELECT	ADD POINT/ COPY	UNDO	REDO			Command Line

This action packed magazine disc costs just £4.75 inc Vat.

ARE YOU GOOD ENOUGH?

As the leaders in software for the Archimedes range of computers, CLARES MICRO SUPPLIES are looking to extend our range even further. We are looking for people who are as excited by the Archimedes as we are.

If you have written any programs, completed or not, then we would like to hear from you.

If you have any ideas for programs and have the ability to execute the ideas then we want to hear from you.

If you have the ability to program the Archimedes but not the ideas to program then we want to hear from you.

Programs can be written in any language as long as they perform their stated task. Many of our programs contain large chunks of BASIC with ARM code in the areas that it is needed. BASIC on the Archimedes is a very powerful language and we do not attach any snob value to its use. If your program does what is meant to do then thats all we are interested in. Why not join the top team on the Archimedes. You get the support of our in-house team, privileged access through us to Acorn and invitations to our informal programmers seminars.

The most important point is that you will be earning top royalty rates of if you prefer we will purchase your program outright.

Please write, in confidence, to Mr. D. Clare at:

Clares Micro Supplies,
98 Middlewich Road,
Northwich,
CHESHIRE CW9 7DA

If you have a program either complete or in development then please enclose a copy for our evaluation.

To protect yourself we advise that you lodge a copy of the program with your bank or solicitor BEFORE you send us a copy. You can then prove that your program pre-dates anything that we have.

Act today and become part of the leading software team producing software for the worlds fastest micro.

Adding the Pointer to Screendumps

Martyn Fox describes how to improve the look of your Desktop screendumps by including the mouse pointer.

Paint can be used to take screendumps of the Desktop and save them as sprites, and using RISC OS 3 you can even take timed pictures, allowing menu structures to be put on screen before the snapshot is taken. However, the mouse pointer never appears in these screens, which can be annoying.

Fortunately, you can add one, using Paint. First you have to create a sprite containing the pointer shape. To do this, you will need access to the sprite file containing the default pointer sprite. If you have RISC OS 3, then the sprite, which is called *ptr_default*, can be found in *Resources:$.Resources.Wimp.Sprites*. To load this, click Menu over the Apps icon, choose *Open '$'*, double-click on *Resources* in the Filer window which appears, and then on *Wimp*. Now double-click on the file *Sprites* to load it into Paint.

In RISC OS 2, you can create the file by typing the following from Basic:

```
    SYS "Wimp_BaseOfSprites" TO a%
    SYS "OS_SpriteOp",268,a%,"Sprites"
```

This will save a file called *Sprites* in your currently selected directory. Load this into Paint.

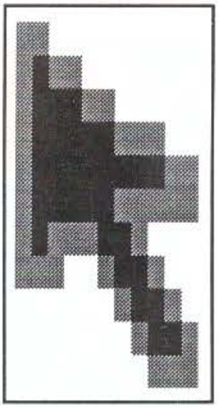
Unfortunately, the sprite *ptr_default* (the pointer sprite), is defined as a mode 8 sprite, a four colour mode. We need to create a new mode 12 sprite, based on the existing one.

Click Select on the Paint icon to open a new sprite file window, and create a new sprite. Both the sprite and the file may as well be called *pointer*. Make the new sprite mode 12, 11 by 11 pixels with a mask, open its window and zoom to 10:1.

Open the Paint *tools* window, and select the *paintbrush* icon, which gives you the *Use sprite as brush* option. Type *ptr_default* into the 'Name:' field. If you are using RISC OS 3, then turn off the *Shape* option. Finally, click on the 'OK' box.

You will now find, when you move the mouse pointer over the sprite window, that a giant pointer also appears. It will exactly fit the window, provided you position it carefully. When you have an exact fit, click Select and it will stay there, but will consist of various shades of grey, and the background will be white.

You now need to use the *Replace colour* option to change the colours. Unfortunately, the pointer has its own colours separately defined, and you do not have access to them in the palette. You can, however, get a fairly close match in the default Wimp palette with dark blue and light blue. Don't forget to replace the white background with the mask colour, from the bottom of the *Colours* window.



The pointer sprite

You now have your own copy of the mouse pointer sprite. When you've saved it, you can use it to add a pointer to any number of screen dumps in the following way. Load both your screen file and the pointer file you have just created into Paint. Choose *Use sprite as brush* as before, and type in *pointer* as the sprite name.

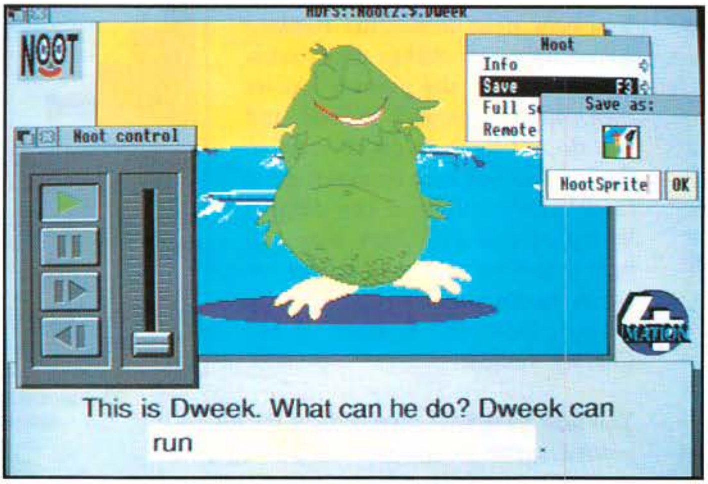
When you move the mouse pointer over your screendump window, you will see the ghost of a yellow pointer moving in front of it. Position it where you would like the pointer to appear and click Select, and then resave the screendump file. Your screendump is now complete with a pointer.

This month's magazine disc contains a suitable pointer sprite all ready for immediate use.

Noot

Mark Sealey assesses 4Mation's latest educational software.

The oddly named Noot is an interactive animation package chiefly aimed at the education market. It is suitable for all ages and will appeal, in different ways, to both primary and secondary schools.



This is Dweek. What can he do? Dweek can
run

Dweek - one of the sample animations

Noot is supplied in an A5 size plastic wallet with no fewer than seven discs together with 3 accompanying booklets, registration card, and an extras order form. The *Noot* application animates existing Noot files created by a second application, *Nootpad*. Also on the discs are tutorial files, the Montclair font, over 100 compressed Draw files (and the compressor) as well as tunes to go with the animations - in Tracker format.

A Noot file typically consists of one or more graphic frames in Draw file format (amongst others) with optional linked text, music or sound. The user interacts with the graphics by responding to a single on-screen prompt. This is itself created (and can be modified) within the Noot file using Nootpad (see figure 1 for a typical example).

This prompt can be a menu, where a letter or number leads to a demonstration - of how a zip fastener or cistern works (say) - or your input can be the answer to a question. Alternatively, you can be asked to type in a word or phrase for something graphical to happen - usually for an object to appear or change for a controlled period of time before the main graphic returns and the original prompt reappears.

Another inventive example is that of *Dweek* - one of the bundled Noot files. Here a Dweek (an imaginary troll-like cartoon figure) can do many things: jump, smile, sing, swim or cry. This is reminiscent of Podd, the successful early educational software for the BBC micro (now updated for the Archimedes - see last month's RISC User). The difference with Noot is that the Nootpad application lets you choose what Dweek is and is not capable of doing.

USING NOOT

The first disc of the Noot package is copy-protected. It also requires that you enter a name to effect user-registration. Only after this has been completed can the software be copied to a hard disc. The 'key' disc will still be required each time Noot is run.

This may have disadvantages where it is to be used with very young children. The only alternative is to pay twice the price for a site licence, when an unlimited number of non-protected discs may be used by the same institution.

Noot (which is fully multi-tasking) installs itself on the icon bar, where it provides seven menu options. These control font size and name, and will automatically and smoothly include your other fonts. Or you can force Noot files to take over the whole screen, or load files into memory instead of overlaying separate screens from disc one by one as memory permits. Finally, there is the option to save/load this set of choices and make them the default.

To use a Noot file it is necessary to drag it onto the icon bar icon, or double-click on the file icon. They take several seconds to load but then the fun begins. As long as your input in response to the prompt is recognised, the graphic or part of the graphic will be animated; for instance, the playroom example file has the prompt:

"There are ten toys in the playroom. What can you see? I can see a "

You type *teddy* and the teddy animation begins. Type *doll* and she gets up and dances. Trying to select a non-existent object produces the response that "There is not a 'whatever' in the playroom." You must try again. Or you can be left more in the dark (as with the Farm file) to guess what is likely to be present but hidden in the scene with which you are presented... cattle, hay, dogs but no ducks.

ON SCREEN CONTROLS

Clicking with Menu over the single Noot window produces a simple menu leading to four choices. The first three are:

Info box version number and registered user etc.;

An option to save the current picture as a sprite;

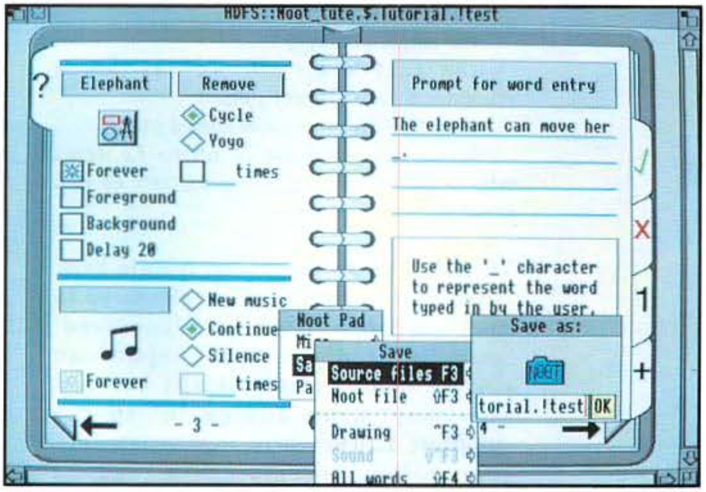
Display the graphics not in a window (which anyway is not scalable or scrollable) but taking over the full screen.

Finally there is *Remote Control*. This is a separate window to control sound volume via a vertical slider, and animations via video-style play, pause, back and forward movement buttons (see figure 1 again).

SCOPE AND USE

More than one file can be loaded into Noot at once, though control between them can only be switched by use of the Back icon. A typical Noot file (say the playroom with one line of text and ten animations) takes twenty seconds to load and occupies nearly 400K of disc space. This file is fully 'compiled' from its various elements (see below) and has thus become a self-contained unit.

Education will no doubt use Noot for extension and reinforcement of language work, particularly at primary level. There are many other uses, though: quizzes with right or wrong answers; demonstrations of most things scientific, geographical or visual (several engines and other mechanical devices are included as examples); drills on specific skills (e.g. the Highway Code, electrical symbols etc.).



The elephant can move her
_.

Use the '_' character to represent the word typed in by the user.

NootPad in use

There is no intermediate or fine control, however. Areas of the graphic cannot be singled out as with Magpie. There is just a simple "go on" arrow. Nor can any one animation be explored or broken down in more detail other than by the Remote Control option. Noot is deliberately limited to a single possible prompt and two different responses to any input, but is thus very easy to use.

NOOTPAD

Noot files are created using Nootpad. Once installed on the icon bar, a folder has to be dragged to a directory to set the path in which files will eventually be saved. The Nootpad screen (see figure 2) then appears automatically. There are also four "housekeeping" options available from the Noot icon on the icon bar: these concern the files' appearance, their compression and the working of the word lists (see below). As with Noot, these choices can be saved.

Over each page of the 'nootpad', clicking Menu reveals three simple sets of choices, independent saving of your work, page and route controls, and the ubiquitous Info box and details of your file.

A minimum of 10 'pages' is needed for each eventual Noot file, but there is plenty of guidance from the manual. Each pair of pages represents one stage in the Noot file creation process. These are:

an optional title screen;

the single prompt;

the text that will appear for a recognised (i.e. 'correct') input;

then that for an unrecognised one;

lastly the word list of up to 12 items which are to be recognised as part of this input.

There is a well thought-out feature here. Firstly, the word list feature allows up to twelve synonyms to be recognised. Secondly, feedback to the inputs can also be made grammatically correct. This may mean adding 'n' to the indefinite article where appropriate. For poor spellers, encouragement could be given in certain circumstances, for example, by accepting both 'gril' (sic) and 'gurl' (sic) for 'girl'

It is likely that most younger users will not touch Nootpad at all, but there is nothing wrong in that. As is clear from figure 2, however, the layout and the notebook metaphor are both intuitive and easy to follow. Each option is carefully and clearly explained in the manual, and a wide variety of combinations (distribution of music, delay and wait times as well as font and type of display cycle etc.) is available.

Since much of the effect is achieved by skillful use of Draw files, only those used to getting the best from Draw will successfully create animated Noot applications. An animation is achieved by saving the changes between two or more Draw frames (or those from Poster, Chameleon or Vector as well). All you have to do is drop the graphics into Nootpad in the right order - the program does the rest.

EVALUATION OF NOOT/NOOTPAD

4Mation's Noot/Nootpad is a simple idea done well. The product is supported by excellent documentation, and I have remarkably few adverse criticisms of the package. It certainly has potential in education and beyond.

Two supporting booklets entitled "Power" and "It Works Like This" (with supporting files) are to be applauded. They make much of these animations in their own right. It is a plus point, too, that graphic components of Noot files can be saved separately for independent use.

On the other hand, files can be huge: just 21 objects in the sample Farm file together with their noises occupy almost 800K, a whole disc. To make changes to Noot work it is necessary to maintain the 'source' files as well; at this point things could get unwieldy - even with the compression techniques employed.

CONCLUSIONS

Will Noot, excellent as it is, find a distinct market niche? Those wanting a true multimedia approach may well go for Genesis; those needing a book-like carousel effect for Magpie. Without a readily available library of Noot applications, much will depend on users' capabilities with Draw (and similar). I expect 4Mation are well aware of this, but I am also sure that there are many teachers and others who will no doubt find that Noot offers everything they need to create smart and sophisticated animations.

Noot has just the right amount of flexibility and sophistication, and is approachable and controllable too. As such it deserves to succeed and is thoroughly recommended.

Product	*Noot*
Supplier	*4Mation* *14 Castle Park Road,* *Barnstaple, Devon* *EX32 8PA.* *Tel. 0271 25353,* *Fax 0271 22974.*
Price	*£45.00 ex. VAT*
Site licence	*£90.00 ex. VAT*

The 80 Column

An occasional round-up of items relating to printers and printing, compiled by Alan Wrigley.

In RISC User 4:2 we published a hint on how to set up *PrinterLJ* to use manual feed with an HP DeskJet Plus. Several readers have written to suggest how to update this information for RISC OS 3.10. First off the mark was Ben Avison who says: load the file *!Printers.lj.Resources.Messages* into Edit, find the line which reads "String to output when manual feed is selected" (about halfway through the file), and alter the line below it to read:

```
    MANUAL_FEED:|[&l3H
```

(the character after the & being a lower-case L).

Under RISC OS 2, a common method used in programs to detect whether a printer driver was installed was to RMEnsure the *PDriver* module. This advice was given in RISC User's *Mastering the Wimp* series and also the book *Wimp Programming for All* which is based on the series. However, Keith Vernon has pointed out that with RISC OS 3.10 this module is always present whether or not the printer manager is installed, and so a program which relies on this check may crash later if the printer manager is not there. Making the print job selection call into an error-returning SWI (i.e. SYS "XPDriver_SelectJob") appears not to work since the error is *not* returned and will cause the program to terminate. The best solution seems to be to replace the line which checks for the module with the following call:

```
    SYS "XPDriver_Info" TO ;flags%
```

which does return the error. You can then generate your own error if bit 0 of *flags%* is set.

Routines have been published in the past (e.g. RISC User 4:1) to detect whether a printer is on line or not. These worked by sending a few bytes to the printer and then seeing if they had been removed from the printer buffer. Under RISC OS 3.10, however, these may not work since the computer will hang if the end of the print job is signalled (by a VDU 3 or by closing *Printer:*, for example) while the printer is off line. The solution is to read the buffer and then flush it *before* the end of job is signalled. The following code (based on a suggestion by Peter Lloyd) should do the trick:

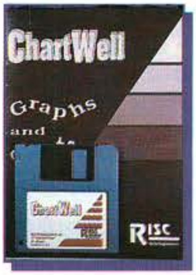
```
    inbuf%=ADVAL(-4)
    VDU 2,1,0,1,0,1,0
    TIME=0:REPEAT:UNTIL TIME>30
    online%=NOT(ADVAL(-4)<inbuf%)
    *FX21,3
    VDU 3
```

online% will now be true or false depending on whether the printer is on line or not. This code can be substituted directly into the listing in 4:1.

M.P. Churchill has found that when using the RISC OS 3.10 printer driver with a Canon BJ-130e, alternate blank pages are produced. The upgrade notes suggest setting the printer to ignore formfeeds (which you cannot do on a BJ-130e) or to change the number of text lines in the paper size definition. Altering the text margins to 0 top, 0 bottom and 80 high seems to work, but why the text margins should have any effect on graphics printing seems a mystery. At first I thought it was because the driver now sends the form length to the printer at the start of each page for graphics printing as well as text, but when I tried altering the height for a NEC P5 it seemed to have no effect on the printout. Can any readers shed light on this?

Finally, John Ferguson has provided some files for use when printing to the DeskJet Plus with RISC OS 3.10. These are included on this month's magazine disc and further details are given on the disc contents page elsewhere in this issue.

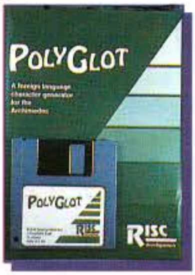
ChartWell



ChartWell is a comprehensive but easy-to-use chart and graph package providing bar charts, pie charts, line graphs, scatter graphs and polar plots with a wide variety of types and many user selectable features. Import data from other files in standard formats; export in Draw file format. Flexible data selection and ordering; useful 'save options' feature.

Members' Price
£24.95 inc.Vat

Polyglot



This is a highly flexible package which can be readily customised to the needs of the user. PolyGlot allows you to access all the characters not normally found on the keyboard from simple user defined windows; ideal for word processing, DTP work etc. in foreign languages. Can also be used for other groups of special symbols (e.g. mathematical). Full printer support.

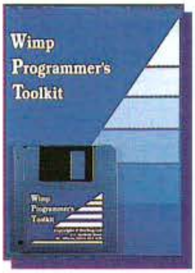
Members' Price
£14.95 inc.Vat

ArcScan III

ArcScan is a well established computerised indexing system. ArcScan III comes complete with indexes to all Acorn manuals (including the new RISC OS 3 Programmer's Reference Manual). Separate Library discs cover Acorn User, Acorn Computing, Archimedes World, RISC User, BEEBUG (upgrades available).

Members' Price
ArcScan **£12.95**
Library Discs **£7.95**
prices inc.Vat

Wimp Programmer's Toolkit



This is a collection of 12 multi-tasking applications to assist in the development and debugging of Wimp programs written in Basic. Ideal companion to the book Wimp Programming for All.

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File Handling for All
by David Spencer and Mike Williams

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David Spencer and Mike Williams

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Wimp Programming for All
by Lee Calcraft and Alan Wrigley

This book provides a comprehensive introduction to the many details of Wimp programming in Basic, dealing with the Wimp poll loop, windows, icons, menus, file transfers, outline fonts and much more.

Members' Price
Book **£12.95**
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Impact!

A new database system reviewed by John Schild.

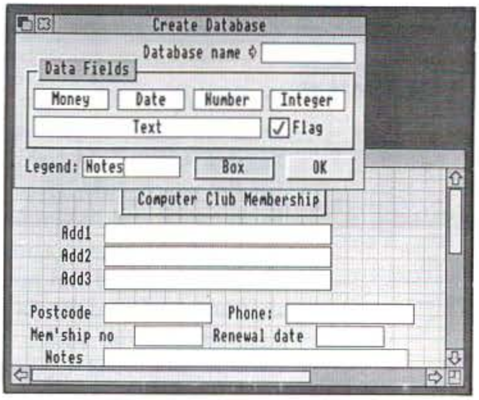
Impact! from Circle Software is a simple database management system with one distinctive feature which lifts it out of the commonplace: it integrates with the Impression document processor. As computer printout options become more diverse and sophisticated I think this might prove to be a trend-setting development.

The variable size and relative pitch of outline fonts have changed the printout concept of the Acorn range of computers from ASCII controlled line printing to bit-mapped page printing, leaving the designers of database management programs with no very obvious solution to the problem of writing sensible report generators for any printer configuration.

The first release of Digital Services' Squirrel (see review in RISC User 5:5) reacted by giving us a system so complex that few potential users understood it - though it is now much improved. Impact! has given up the unequal struggle and provided instead what I believe to be the first fully developed implementation of Impulse II, Computer Concepts' public domain relocatable module, designed to pass data and commands between Impression and other co-operating applications. Thus, from the marketing point of view Impact! is aimed primarily at existing Impression users.

Impact! is an essentially simple database system with some inevitable limitations. There are no aids to quick data entry and no validation tests or password provision. Graphics images cannot be stored, and the system font alone is employed. Once saved, the record card layout cannot be edited to include additional fields. There are no relational capabilities. Incidentally the Impression route to report generation means that some common reporting functions will not be possible, such as summing the contents of a range of numeric fields, or other similar field calculations or summaries.

PRESENTATION AND INSTALLATION
Impact!, as delivered by post, has a distinctly "cottage industry" feel. No affluent plastic wallet or slip-in binder, but just a stapled 50 page booklet and a single 3.5" floppy disc containing the application and apparently little else besides. If you buy the package over the counter, however, the package does come in a plastic box. The software is designed to be largely intuitive in use so the manual does not have too onerous a task to perform, and is generally adequate. It shows evidence of being written by the programmer rather than from the standpoint of someone approaching the package for the first time. This deficiency is unfortunately at its greatest in the one innovative area of programming, the hot-link to Impression.

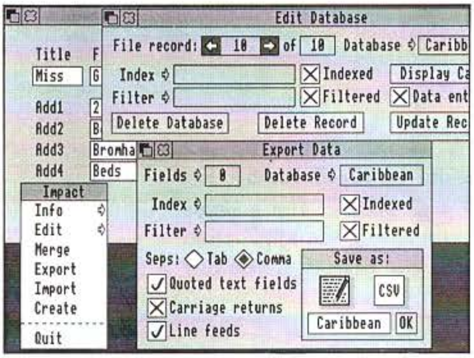


Impact's easy routines for database creation

Double-clicking on the application icon loads it on to the icon bar from whence it can be activated in the familiar way. Under test it ran immaculately in the RISC OS 3 environment, multi-tasking flawlessly with other loaded software. It can be run from floppies or a hard disc. On start-up it occupied 384K of RAM. The delivered version 1.09c was serial numbered and named to the reviewer, but no further software protection is included.

IMPACT! - A GUIDED TOUR

Clicking with the Menu button over the Impact! icon reveals the application's main toolbox. The initial option is Create - allowing the design of a record card from scratch. Choosing this option opens two windows, the first giving access to a range of field types in a "picker" box, and the second an empty box into which the selected field types may be dragged. The field types on offer are text, money, date, (real) number, integer and flag (for "yes" or "no", "on" or "off" etc.).



Title F
Miss G
Add1 2
Add2 B
Add3 Bromha
Add4 Beds

File record: 10 of 10 Database Caribb
Index
Filter
☒ Indexed
☒ Filtered
☒ Data ent

Fields 8 Database Caribbean
Index
Filter
☒ Indexed
☒ Filtered
Seps: ○ Tab ● Comma
☑ Quoted text fields
☒ Carriage returns
☑ Line feeds
CSV
Caribbean

Exporting data as CSV or text file

Once transferred to the prototype record card, the fields can be tweaked in a variety of helpful ways. Text fields can be assigned lengths which differ from the default value; background and foreground colours can be changed and justification altered at will. Fields can be sized and positioned to give the user any preferred layout and presentation. Legends may be added which optionally correspond to field names or numbers. Once complete, the fields can be ranked such that when data is being entered, the text caret enters the boxes in a prescribed order. The finished record card structure is then given a name, and by default, though not of necessity, is hidden away inside the application's directory structure - which is why the application disc seems so bare.

The Edit facility will usually be the next tool to be used, initially for data entry. Choosing Edit from the menu, and Card from the submenu opens the edit window. Clicking Menu over the database name box allows the selection of any stored database. Several may be open on screen at once, but only one may have the input focus at any time. The edit window allows browsing and searching as well as data entry and editing.

All fields may be optionally indexed for presentation in alphabetical (or numerical) order, and simple or complex filters may be created and saved away for subsequent use, acting on any selected field while browsing or exporting data. I was unhappy to discover that by the user's careless oversight, data can be entered in record number 0, but is lost when you think you might have saved it. I am disappointed that saving is automatic and takes place only when the last field has been entered in a record and Return pressed; I would have preferred a separate save option. Another shortcoming is that there is no way to accelerate the browsing of a long database; there are only forward and backward scan arrows and a simple find facility operating through a dialogue box. Circle Software please take note.

Other tools provided are Import and Export functions, which the manual claims to have been built to the Acorn draft standard for CSV (comma separated value) files for data transfer between different databases. Export works through any indexes or filters which may have been selected, and has the option of different CSV parameters to meet the needs of non-standard databases or other applications. The Import facility tries to make a best fit of any data presented from a CSV file, and trial and error will usually result in an acceptable result. The remaining database management function is the Merge command which has been designed to take over all report generating functions and for which a recent version of Impression is a requirement.

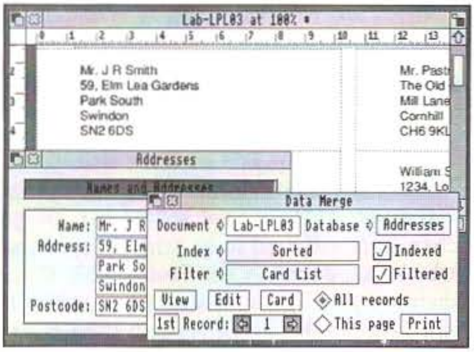
MERGING WITH IMPRESSION

I commented above on the deficiency of the manual in this area, because the ability to interface with Impression is quite critical to this software, and unless this operation is made plain to the novice user, Impact! will be judged as seriously flawed. The cop-out in the Impact! manual is to recommend that the user study carefully the relevant section in the Impression manual, without conceding that the Impression manual is not in this respect a triumph of lucid communication. A clear and simple tutorial is needed but not obviously provided. A few comments might suggest what I believe needs to be explained simply to users new to the merge concept.

Impression 2 has been equipped with a facility to allow messages understood by the associated module Impulse II to be embedded anywhere in an Impression document. Naturally these messages have to conform to the Impulse II syntax and point to the software partnering Impression, in this case, Impact!. When Impression detects a command of the form

```
:Impact.Addresses Fetch 1
```

the module will trot off to the Impact! application, find the database named *Addresses*, and attempt to embed at the position of the merge command the contents of field 1. Once this has been achieved Impact! can, if requested, pass the Print command back to Impression, causing the document to be output to the printer with the imported data embedded at the merge command. The operation can be repeated as many times as required for mail merge operations, or varied to print, for example, a series of address labels or lists, or other kind of form in which standing text is combined with data extracted from database files. The Merge function built into Impact! is designed to enable the process and guarantee the Impulse syntax.



Mr. J R Smith
59, Elm Lea Gardens
Park South
Swindon
SN2 6DS

Name: Mr. J R
Address: 59, Elm
Park So
Swindon
Postcode: SN2 6DS

Document Lab-LPL03 Database Addresses
Index Sorted ☑ Indexed
Filter Card List ☑ Filtered
◈ All records
◇ This page
Record: 1

Impact's merge facility exporting data to an Impression labels document

Buried inside the structure of the example addresses file in Impact! is a document file containing two example Impression files which include merge commands. These hold the key to understanding this operation of Impact!. If you load the merge window, the addresses database and the labels document onto the screen, you can click in a few boxes and experience with delight the computing power inherent in this approach to report generation. This initial delight is not quite maintained when you try to apply the lessons learned by observation to the creation of new merge commands in other Impression documents, but once the basic principles have been grasped the hieroglyphics in the manual begin to make sense and you have a practical tool which justifies this new database program and extends the usefulness of Impression.

FINALLY

Is Impact! a good buy at £49.95 ex. VAT? Possibly not as a general purpose database because of its obvious limitations, but it will have an undoubted appeal to those who are willing to view it primarily as an extension to Impression. I think I might also counsel potential buyers to petition Circle Software for a beginner's guide to the merge command before parting with their cash.

Product *Impact! Database*
Supplier *Circle Software*
33 Restrop View, Purton,
Swindon, Wilts SN5 9DG.
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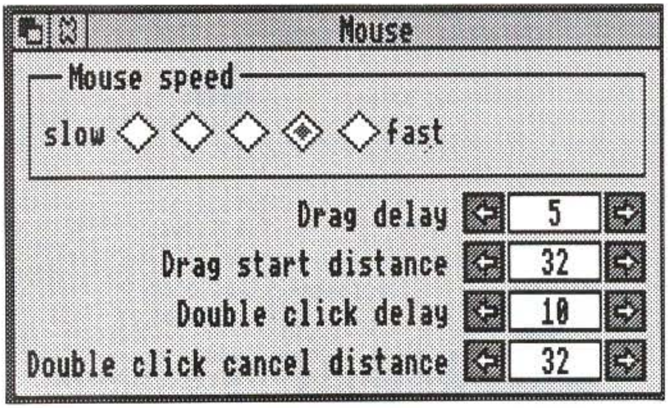
Into the Arc: Understanding Configure

Mike Williams continues his guided tour.

We will continue to look at some of the configuration features available under RISC OS 3 using the *Configure* application. See last month's article (or check your User Guide) for how to load this application.



Mouse speed

slow ◇ ◇ ◇ ◈ ◇ fast

Drag delay 5

Drag start distance 32

Double click delay 10

Double click cancel distance 32

Mouse speed settings showing next faster choice (to default)

MOUSE AND KEYBOARD

The *Mouse* speed settings are largely a matter of taste. However, as you become more proficient in using the mouse for various tasks you may begin to find its operation is unnecessarily slow. You can speed up the mouse - this effectively changes the *gearing* between the distance moved by the mouse and the distance moved by the mouse pointer on the screen. I prefer the next faster setting from the default. There are other settings as shown in the corresponding window (called a dialogue box when you use it for input in this way). The best approach is to vary the parameters and check the consequences - the effects are immediate.

The *Keyboard* settings are not dissimilar but (obviously) relate to the keyboard. Auto repeat should be enabled - if it causes any problems try increasing the delay time (this is the time which elapses before the key press starts to auto repeat). I personally always prefer to change the *Caps Lock* setting to *Off* as I mostly use my machine for word processing and DTP work for which lower case is the normal input mode.

MEMORY SETTINGS

Although the memory allocation parameters can be quite important, most of these can be safely left set at zero. The first three options should normally be left at zero anyway as memory is allocated by RISC OS as required. *Font cache* settings, however, can have a significant effect on the performance of your system. A cache is simply an area of memory (sometimes a separate high speed memory) used to store information temporarily for quick access). If you use many different outline fonts (and Trinity, Hommerton and Corpus are built in to your system) at a variety of different sizes and styles, then you ideally need a much larger Font cache allocation than someone who uses only two or three fonts in a limited range of sizes and styles.

When text is to be displayed in an outline font, RISC OS needs to create a so-called *bit image* of each character from the outline font definition held in ROM or on disc (a bit image is rather like a sprite - a collection of pixels or dots on screen). Every time you select a new font, change size or style, a new set of bit image characters will need to be created. It is these which are stored in the Font cache. Once there they can be accessed very quickly. If the Font cache becomes full then fonts cached earlier will be overwritten with later ones - the smaller the font cache the more often this will happen and the slower will be the operation of your machine while this is happening. Remember, too, that larger fonts use up more space in the cache.

You need to determine the best setting for your needs - for a 1Mb machine I would suggest a minimum of 64K, with 2Mb I would recommend 128K, and for 4Mb at least 256K. It is always a compromise as a larger font cache means less memory for other tasks. The less memory there is in your machine the more difficult the compromise. However, this is one setting which can always be increased easily when the need arises if memory is available (by using the Task Manager), so don't make a choice based on your worst needs.

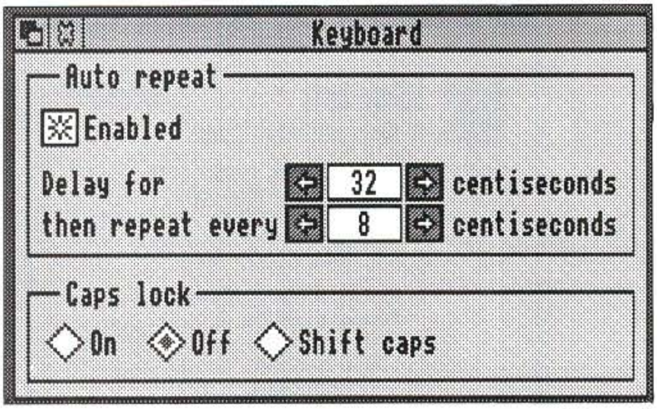
One way of controlling this further is by using the setting in the Memory allocation window called *Font cache limit*. The value specified for Font cache determines how much memory is allocated for font caching when your machine is first switched on. If you set Font cache limit to a higher value still then this sets an upper limit. The Font Manager will, if necessary, try to increase the amount of memory allocated to the font cache up to the Font cache limit. Thus you can set a reasonable Font cache for when you start but allow the size of the cache to increase as required. Again, this is more likely to be helpful on a 1Mb machine, where you could set the font cache to (say) 32K and the Font cache limit to 64K.

Don't be afraid to experiment, but do try to avoid any situation which needs outline fonts if the font cache is set to zero or a very low value. In these circumstances, displaying text in an outline font can take for ever and a day, as virtually every character is individually converted into a bit image as needed for display on the screen, because no space has been allocated to store a previously converted copy.

The only other memory setting which is worth considering is that for a RAM disc. This uses part of memory as the equivalent of a disc storage system, but one which is much faster in operation than either floppy or hard disc. Such a feature can be particularly useful if you have a machine with just a single floppy disc and no hard disc, as it makes copying files or directories much much easier. You just copy from one disc to the RAM disc; then from RAM disc to the second floppy. However, for this purpose I would normally set up a RAM disc when required rather than as a permanently configured feature.

A RAM disc can be useful for the temporary storage of files which you know you are going to throw away very soon. A RAM disc has the merits of being very quick in operation, and it is worth understanding what this feature is and the use which can be made of it. Do remember, though, that everything in the RAM disc is lost when you switch your machine off.

If you only want to make temporary changes to memory allocations then you should not use Configure but the *Task Manager* which is identified by the green Acorn logo (under RISC OS 3) to the right of the icon bar. Click on this and scroll the window until the settings for font cache or RAM disc appear, and adjust the slider bars (using Select) for the size you require. Any new setting will only remain in force until you switch your machine off.



Keyboard

Auto repeat

☒ Enabled

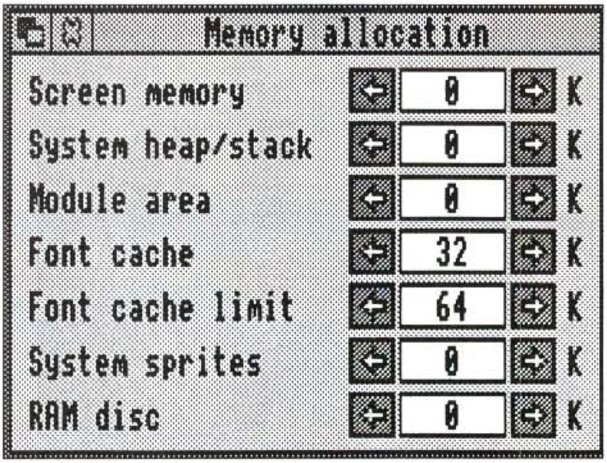
Delay for 32 centiseconds

then repeat every 8 centiseconds

Caps lock

○ On ● Off ○ Shift caps

Normal keyboard settings



Memory allocation

Screen memory 0 K

System heap/stack 0 K

Module area 0 K

Font cache 32 K

Font cache limit 64 K

System sprites 0 K

RAM disc 0 K

Suggested font cache settings for a 1Mb machine

FOOTNOTE

There is nothing like upgrading your own machine to RISC OS 3.10 to understand any problems or confusion which can arise.

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(Please allow up to 28 days for delivery)

Having done this for both my home and office systems recently, it has highlighted two problems which may interest readers.

If you have a non-Acorn SCSI or IDE hard hard disc fitted, you may well find that the hard disc configure options (which I referred to last month) don't seem to work. In the first instance, check with the supplier of the interface to see if you need any kind of upgrade. My Lingenuity SCSI interface needed a later version of the controlling ROM to be fitted to the interface board. Furthermore, you may still need to follow the instructions supplied with your hard disc to configure it, rather than using the RISC OS 3 Configure application. Again, this was true for the Lingenuity SCSI interface, and for a RISC Developments IDE interface, and I have heard that the same applies to an HCCS IDE interface.

My other problem arose with the creation of a Boot file using the new *Desktop boot* option in the Task Manager (click with the Menu button over the Acorn logo on the right of the icon bar). Despite following the instructions in the manual I could not initially get this to work. Page 110 of the RISC OS 3 User Guide states that selecting the Auto boot results in the system being correctly reconfigured to perform an auto-boot when switched on. The part which didn't work for me was the '*OPT 4 2'. The answer is to press F12 (to exit from the Desktop), enter:

```
OPT 4 2
```

in response to the '*' prompt, and then press Return twice. The auto-boot operation should then work.

It is possible that the problem I encountered was related to one or other of the two hard disc interfaces I was using, but as far as I could test it, the same problem also seems to exist with an A5000 in the office (see also the RISC OS 3.10 Release Notes page 7). Anyway, I hope this information may help some of you who have encountered similar problems.

We will deal with the remaining Configure options next time.

HINTS & TIPS

Don't forget to keep sending in your hints on anything relevant to the Archimedes range (RISC OS 2 and particularly RISC OS 3), and remember, we pay for all hints we publish.

USING DeskEdit 2 WITH DESKTOP ASSEMBLER

Colin Murray

DeskEdit 2's *Browser* function is extremely useful when programming in Basic or C for listing procedure definitions and so on. If you use Desktop Assembler, you can use the function to list labels, provided that you make some small amendments to your source code. Simply keep all labels on separate lines and suffix them with a comment containing a sequence of characters which are not likely to occur elsewhere. My own method involves using the string ";;p" for program code, ";;s" for storage locations, and ";;e" for error blocks. Thus labels in the source code will look something like this:

```
poll_loop ;;p
block ;;s
fatal_error ;;e
```

and so on. Then use F2 to activate the browser and enter the appropriate comment string to display a convenient list of all the relevant points in your source code.

EASIER FRAMES FOR DTP

Karen Wilson, David Cawsey and Tom Sapey

Thanks to all the above who sent in various methods for creating masks more quickly than David Pilling's in Volume 6 Issue 2. Here is a method combining all their ideas.

1. In Draw, turn on the Grid and switch Grid Lock on.
2. Create a rectangle using the Open Path tool with 4 straight line segments (drawing in a clockwise direction).
3. Click on the Move tool.
4. Click on the Closed Curve tool.
5. Click on the 12 o'clock, 3 o'clock, 6 o'clock points of the circle you want, and double-click on the 9 o'clock point to close the circle.
6. Set the fill colour, which will create the mask.

In fact, this gives a circle which is not quite perfect. A near-perfect circle can be created by a simple expedient which avoids having to tweak the control points. Halve the height of the rectangle in step 2, create an ellipse with a width twice that of the height instead of the circle in step 5, and finally double the height of the entire mask by stretching, to achieve the required circle.

RISC OS 3 FONT CACHE FILES

Tony Shew

Typing:

```
SaveFontCache <filename>
```

at the command line (press F12 in the Desktop) will save the current font cache as a file on disc with type *Cache* (&FCF). Double-clicking on this file will then load it into the font cache, which can speed up operations no end if you tend to use the same fonts most of the time. Note that the font cache must be empty to enable a new cache to be loaded, otherwise an error is generated. However, there is no sprite defined for this filetype, so if you want to define your own, you should create sprites called *file_fcf* and *small_fcf* to merge with the system sprites by using the IconSprites command.

USER FLAGS IN ASSEMBLER PROGRAMS

Alan Wrigley

Most programs use flags for various reasons - to keep track of whether a window is open or closed, or whether data in a window has been modified, and so on. A large program might well use quite a number of flags. The most efficient way to do this in Assembler is to set aside one of the ARM's registers, say R11 or R12, as a flags register, allowing you to use 32 flags (and some of these can often be doubled up if the flag is only used used in a specific part of the program). It is usually possible to spare one register in this way, and on the rare occasions when you do need all the registers you can lay your hands on, you can temporarily store the flags register on the stack. This is much more efficient than loading sets of flags from memory each and every time you want to read or set one.

ACORN'S Find WITH DeskEdit 2

E.W.Ayers

I had a little trouble when I initially tried to use Acorn's Find application with DeskEdit 2, which was due to my having the RISC User Toolbox loaded. The problem is that the Toolbox has a *Find command, which clashes with the Find application with the result that Toolbox took over the searching, removing the advantage of throwback. The simplest solution was to include the following lines in the file !Find.!Run:

```
*RMLoad <path>.Toolbox 1.00
*RMKill Toolbox
```

where <path> is the directory containing the Toolbox module.

COLOURFUL QUICKMODE ADDITIONS

Brian Holder

The QuickMode application from RISC User 6:2 is very useful, and the following changes make it even more so. When these lines are added, the current mode is highlighted in red (if it appears in the three defined modes). All the other modes are greyed out, but are still visible. To make the alterations, add the following lines:

```
222 mode1%=MODE
262  mode2%=MODE
264  FOR i%=0 TO 2:PROCupdate(i%):NEXT
542 IF mode2%=0 mode2%=mode1%
```

Change line 550 to read:

```
550 IF a$=STR$mode2% GCOL 11:VDU5 ELSE
GCOL 2:VDU5
```

and finally, add:

```
722 mode1%=MODE:mode2%=MODE
```

USING R14 AS A TEMPORARY REGISTER

Rolf Herschel

When a subroutine is called in an ARM program, the return address is passed in R14. Often, however, the subroutine itself calls a further subroutine, in which case R14 must be pushed onto the stack using an instruction such as:

```
STMFD R13!,{R14}
```

It is easy to forget that, once this has been done, R14 is available as an additional register in just the same way as any other, provided that you do not attempt to retain data in R14 over a subroutine call.

RISC OS 3 PIPE WORK

Gray Girling

RISC OS 3 has more built-in filing systems that RISC OS 2. One whose use may have escaped most people's notice so far is PipeFS (try typing *Help PipeFS from the command line - not terribly helpful). PipeFS exists to help communicate between tasks in different windows. To see it in action, press F12 and type:

```
Filer_OpenDir Pipe:$
```

followed by Return twice to get back to the Desktop. Now open up an Edit Task window (by pressing Ctrl-F12) and type:

```
list Pipe:$.demo
```

Nothing happens, except a file is created in the Pipe:$ window. Now open up another Task window, and type into that:

```
help { > Pipe:$.demo }
```

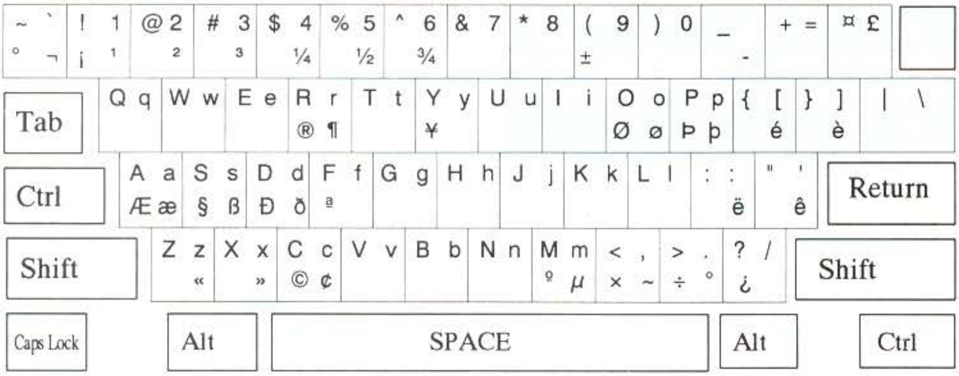
and the output from the help command will appear in the first Task window, and the file Pipe:$.demo will disappear.

What is happening is that PipeFS is acting like a normal filing system (e.g. RamFS), except it takes its memory from the relocatable module area, and its files simply buffer information being written by one task and read by another via the pipe operator when the redirection or piping operators are used (i.e. >, <, >> and |).

ALT KEY SHORTCUTS ON RISC OS 3.10

Omer Roucoux

In the December issue of RISC User, Lee Calcraft talked about the keyboard changes in RISC OS 3. One of the most useful features of the new operating system is that a larger number of special characters can be accessed by pressing the Alt key with other keys on the keyboard; this is much easier than the normal method of pressing Alt along with the ASCII code on the numeric keypad. The diagram below shows which characters are available using this method: the top line for each key shows the normal characters with and without Shift, and the second line shows the corresponding characters obtained by holding Alt-Shift-Key and Alt-Key respectively. To produce letters with accents, hold Alt and press the relevant accent key (shown below as é, è, ë, ê), followed by the letter you wish to accent. Thus to enter á, you should type Alt-[, and then press A.


~ ` ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = ¤ £
° ¬ ¡ ¹ ² ³ ¼ ½ ¾ ± -
Tab Q q W w E e R r T t Y y U u I i O o P p { [}] | \
® ¶ ¥ Ø ø Þ þ é è
Ctrl A a S s D d F f G g H h J j K k L l : ; " ' Return
Æ æ § ß Ð ð ª ë ê
Shift Z z X x C c V v B b N n M m < , > . ? / Shift
« » © ¢ º µ × ~ ÷ ° ¿
Caps Lock
Alt
SPACE
Alt
Ctrl

The diagram above is available on the magazine disc as a Draw file which you can print out and stick above the function keys.

DROP-SHADOW FRAMES IN OVATION

Michael Webb

Further to Alex Belton's hint *Shadowed Text in Ovation* (RISC User 6:2), here is a tip for creating drop-shadow text or graphics frames in Ovation. As Ovation doesn't allow part borders (unlike Impression), it becomes necessary to create two frames. To make the effect, create one frame, and then duplicate it with no offsets (by using the *Duplicate frame* option in the *Object* submenu). Using the *Frame border* dialogue box, give the current top box a plain black border of 3mm (or whatever preference you have), and send it behind (via the *Object* submenu). Click on the new front frame to select it, and give it a thin plain black border (0.4mm, say). Now extend it down and right (using the bottom-right 'ear') to complete the drop shadow effect. If enlargement is needed later, then both frames will need stretching separately, and for repositioning, move the back frame (the one with the thick border) first, and relocate the other on top of it. This technique can also be expanded to create other shadow effects, such as two-sided or three-sided shadows.

TIME AND DATE CONVERSION

James Wright

You may previously have used SWI OS_ConvertDataAndTime to convert a 5-byte time value into a string of your own specified format. With RISC OS 3.10, you should use instead the SWI Territory_ConvertDateAndTime, since this will use time and date values which are appropriate to the current territory. For example, if the format string you supply is:

```
%WE %DY%ST %MO %CE%YR
```

this would result (in English) in a string of the form:

```
Wednesday 11th November 1992
```

Using the new call will ensure that the day of the week and the month are translated into the correct language for the territory.

The parameters which were previously passed to OS_ConvertDateAndTime in R0-R3 should be passed to Territory_ConvertDateAndTime in R1-R4, in the same order. R0 contains the required territory number, or -1 for the current territory.

USING SuperBD WITH PINBOARD

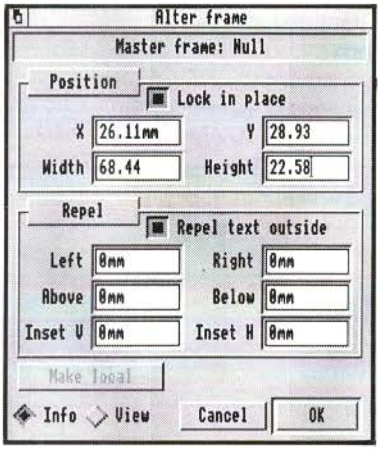
Alan Wrigley

RISC User's *SuperBD* (6:2 magazine disc) has many advantages over Acorn's Pinboard, not least the ability to display small sprites and coloured text. I use it in preference to Pinboard, but if you do this you cannot iconise windows, since SuperBD's backdrop obscures the Pinboard, and there is no way of retrieving them. However, SuperBD calculates the screen size from the mode which is current when it is installed, and you can make use of this to gain access to Pinboard's facilities as well. If you start up SuperBD in, say, mode 12 (with a mode 12 sprite as a backdrop) and then switch to mode 35, you will find that SuperBD operates over most of the screen (up to 1280 OS units horizontally and 1024 vertically from the bottom left corner), but over the rest of the screen you can access Pinboard. This enables you to iconise windows on the part of the screen not used by SuperBD.

Good Impressions

Richard Grant supplies some more hints and tips for Impression users.

In my last article (RISC User 6:2) we created a four column page with vertical rules using the Master Page system, and this leads us on nicely to some further consideration of frames.



Master frame: Null
■ Lock in place
X 26.11mm
Y 28.93
Width 68.44
Height 22.58
■ Repel text outside
Left 0mm
Right 0mm
Above 0mm
Below 0mm
Inset V 0mm
Inset H 0mm

Alter Frame dialogue box

You may not have realised but a vertical rule is merely a very narrow frame, filled with solid colour. To verify this, pull up Master Frame 18 from last month's issue and scale the screen image to 400% using Ctrl-F9. Click on one of the vertical rules and call up *Alter Frame* via Ctrl-F10. You will see that the dialogue box tells us that we have a very narrow frame set to colour black. This means that if you wish to alter either the colour of the line or the dimensions, it can be done here.

DANCES WITH MOUSE

You may have noted that you may not be able to click on the vertical line frame at small screen scales. This is because your Mouse Step may be set to four or higher and at these speeds, the mouse "hits" only alternate pixels. If you wish to use lower screen scales for fine work, set your Mouse Step to three or lower. In this respect, a little utility called *MouSpeed* on ADPL Public Domain disc B086, which allows you to alter the Mouse step using hot keys, might be helpful (a similar application was published in RISC User 3:8).

In the *Alter Frame* dialogue box, you will find the *Repel Text* switch. The use of this is fairly obvious, but less obvious is the *Inset editable boxes* underneath. The easiest way to imagine the use of these latter is as *Repel Text* but acting internally inside a frame instead of externally as normal. Otherwise the main difference is that there are only two editable fields, as each field (vertical and horizontal) works in a symmetrical manner. In other words, if you set a 3mm horizontal inset, there will be a blank space on both the left and the right side inside the box of 3mm.

It is sometimes difficult to see exactly where the text ends around or inside a frame. There are two easy ways to show this. In the first instance, set the text to *Fully justify* and the text edges will become more obvious. Secondly, and this way is applicable whether or not text is justified, highlight the text using Ctrl-T. The black, inverse video area clearly shows the edge of the formatted text.

VISITING THE LOCAL

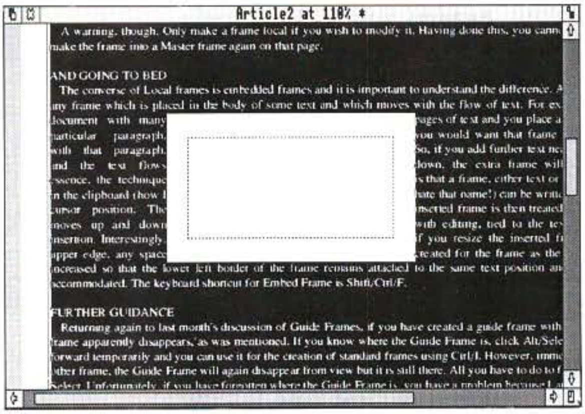
While on the subject of frames and the *Alter frame*, we can take a quick look at the *Make local* button.

Imagine you are editing a long document, several pages long. You have something in a Master frame which appears on every page, say, a page number. Supposing then, on the first page only, you wish to add an item near the page number, say, the chapter number or a graphic. This is where the *Make local* button comes in. On the actual working first page, click on the page number frame, which, because it is a Master page frame, has no handles. Then call up the *Alter frame* box and click on *Make local*. The frame will then acquire handles and become a Local frame and this allows you to modify and add your chapter number or graphic, or even cut it. In other words, you can change a frame from being a Master frame to a Local frame.

A warning, though - only make a frame Local if you wish to modify it. Having done this, you cannot reverse the procedure to make the frame into a Master frame again on that page.

OR EMBEDDING

The converse of Local frames is embedded frames, and it is important to understand the difference. An embedded frame can be any frame which is placed in the body of some text and which moves with the flow of text. For example, if you have a long document with many pages of text and you place a frame that is relevant to a particular paragraph, you would want that frame to stay closely associated with that paragraph. So, if you add further text near the top of the document and the text flows down, the extra frame will flow with the text.



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ccommodated. The keyboard shortcut for Embed Frame is Shift/Ctrl/F.

FURTHER GUIDANCE
Returning again to last month's discussion of Guide Frames, if you have created a guide frame with
frame apparently disappears, as was mentioned. If you know where the Guide Frame is, click Alt/Sele
forward temporarily and you can use it for the creation of standard frames using Ctrl/I. However, imme
other frame, the Guide Frame will again disappear from view but it is still there. All you have to do to f
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Using a local frame

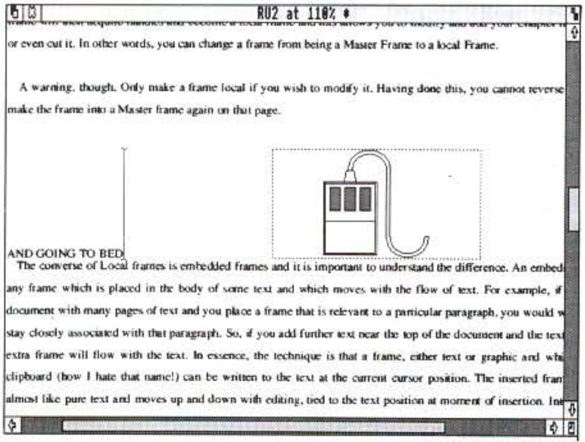
In essence, the technique is that a frame, either text or graphic and which is held on the clipboard, can be written to the text at the current cursor position. The inserted frame is then treated almost like pure text and moves up and down with editing, tied to the text position at the moment of insertion. Interestingly, if you resize the inserted frame by, say, raising its upper edge, any space created for the frame as the frame is inserted will be increased so that the lower left border of the frame remains attached to the same text position, and the full frame height is accommodated. The keyboard shortcut for *Embed Frame* is Shift-Ctrl-F.

FURTHER GUIDANCE

Returning again to last month's discussion on *Guide frames*, if you have created a Guide Frame within a Local frame, the Guide Frame apparently disappears, as was mentioned. If you know where the Guide Frame is, click Alt-Select over it and it will come forward temporarily. You can then use it for the creation of standard frames using Ctrl-I. However, immediately you click over any other frame, the Guide Frame will again disappear from view but it is still there. All you have to do to find it again is click on Alt-Select. Unfortunately, if you have forgotten where the Guide Frame is, you have a problem because I am not aware of any way of finding it other than a rather dirty and undocumented method! To do this, delete all text from your document (and turn off the cache if you have an ARM3), press F12 and then Return, and if you have quick eyes, you might just see the Guide Frame being drawn on screen before any other frames are drawn on top of it thus obscuring it. Can anybody out there in readerland help with a better method?

LITTLE HINTS

Finally, this month's little hintlet. If you have pressed Ctrl-I or Insert to place a frame and you change your mind, you will find that Escape has no effect. Instead, click on Menu and then press Escape and, hey presto, the cursor lines will disappear along with the Menu.



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almost like pure text and moves up and down with editing, tied to the text position at moment of insertion. Int

Example of an embedded frame

That's all for this month. Write to me, care of RISC User if you have a query or want to say anything (useful or otherwise) in connection with Impression.

WRITE - BACK

In response to Mike Hobbs' plea in the previous issue for help with auto-booting his A4, Gordon Horsington telephoned to offer a solution. He suggests that if you use F12 to exit from the Desktop, and then enter:

```
*Mount :4
```

before any further commands such as:

```
*Configure Boot
*OPT 4 2
```

then the auto-boot option will work correctly every time.

UPGRADING TO RISC OS 3.1 AND OTHER PROBLEMS

I have recently upgraded my A440 to RISC OS 3.1, and would like to share some of my experiences with other readers. Under RISC OS 2 I used to run a small utility called SpeedROM, but I have found that under RISC OS 3 this can cause problems and peculiar messages suggesting that Basic was playing up. It would appear that it is not feasible to speed up the latest ROMs using the SpeedROM utility.

I purchased my A440/1 fitted with a Lingenuity SCSI interface and 160Mb Quantum ProDrive disc secondhand from a friend. After a few days problems began to arise, usually after several hours of use, and the disc would 'hang' with the drive activity light permanently on. Removing the case I found that the drive was almost too hot to touch. I had read somewhere about fan filters made from anti-static foam - sure enough, mine was not only of this type but had around 0.25" of assorted cat hair, dust and biscuit crumbs on it. Washing out the filter seemed to cure the problems, but I have now invested in some new ones.

John Joyce

Having upgraded my A310 I have sorted out my work environment and would like to raise some questions. First of all, is anyone (especially Bill Hine) going to produce an update of the AltKeyDefs program published in RISC User 4:8 for RISC OS 3? Having to fiddle with !Chars or character tables for all my umlauts and ligatures and things really cramps my style!

Is there any data concerning the publication of updates to the Programmer's Reference Manual to RISC OS 3? What does the Basic Reference Manual contain beyond what is already stated in my User Guide as issued with Arthur way back? What is the topic of the Technical Reference Manuals and which of them is most relevant to the A310. Would it be possible, even without these manuals, to get some in-depth information on the MessageTrans module and the latest control highlights in Wimp programming?

Oliver Schön

We contacted Bill Hine, author of AltKeyDefs. He says that he has no plans to revise the program for RISC OS 3 as he feels that the new International Module seems largely to provide the sort of facilities he was aiming for in his program.

He suggests two options for Oliver Schön (and others):

1. Run the IntKey module supplied on the RISC OS 3 Support disc by Acorn, and continue to use AltKeyDefs as before;
2. Use the facilities of RISC OS 3, i.e.: ß - Alt-S. For umlauted characters (ä, ö, ü), press the Alt and ':' keys together, release both and then press the required vowel. Bill Hine also suggests experimenting with Alt-<, Alt->, Alt-[and Alt-], in each case followed by a vowel to produce other accents.

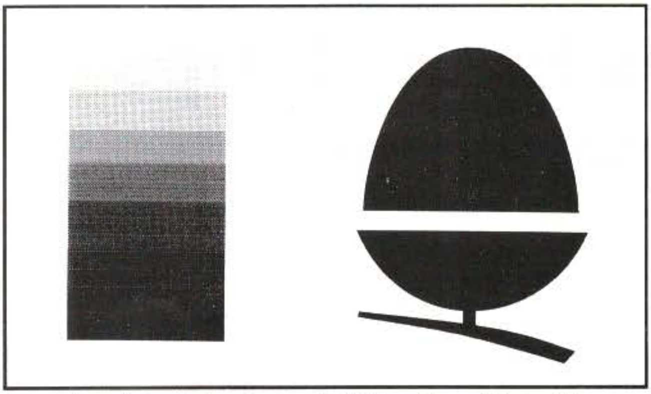
Bill also comments that under RISC OS 3 the command **Keyboard Germany* does not seem to reverse the functions of the Z and Y keys as it did under RISC OS 2, and adds "I cannot imagine why not".

The RISC OS 3 Programmer's Reference Manual may well be available by the time this issue is published - it was at the printers in early January. A new Basic User Guide covering the RISC OS 3 version of Basic (v1.05) will be ready soon, but the relatively few enhancements have already been covered in RISC User 5:3. Technical Reference Manuals deal with the hardware design of different systems, and as such are not relevant to the needs of most users.

CANON BJ-10EX

I would like to criticise the article on the Integrex BetaJet printer in RISC User 6:2. The example printout which you obtained from the BJ-10ex was pathetic to say the least. It would lead the reader to the assumption that it was the fault of the printer. Quite the contrary; the fault in this example is that of the printer driver. Having owned and used a BJ-10ex for about six months I feel the machine is much better than you portray. I realise the article was about another printer, but in comparing it with the BJ-10ex you have done Canon an injustice. I enclose an example of the true quality of the output of this amazing little printer.

George Laidlaw



Sample printout for Canon BJ-10ex from Mr Laidlaw

The purpose of the review was to assess the rival Integrex printer, and to provide a comparison between it and its Canon rival using standard printer drivers. The BJ-10ex is an excellent and popular machine (see Mr. Laidlow's printout reproduced here).

A BEGINNER'S TALE

I am new to the world of home computing, and I have been having a hard time (Aaaaaah!).

Years ago I was a computer operator, and I well remember the excitement when IBM brought out the System 360 to replace the 1401. For the first time we had disc drives; we even had an operating system (with typewriter consoles so that the machine could discuss its problems with you in English rather than in patterns of twinkly lights). Remember punched cards? (and the three-day weeks in 1973 when computer rooms were exempted from the requirement to close down but nobody was sure whether or not we were allowed to have lights on - we had to work by the light of dozens of 12v caravan lights operating from lorry batteries). The fundamentals of computer usage have not changed - you still need some input; you still need a program and an operating system; and you can still get output in a variety of styles - printed, saved to disc, displayed to screen etc. So I did not expect any great difficulty with my Acorn A3010 when I bought the first one to be stocked by our local Dixons. After all, the brochure said that for the first time Acorn had produced a computer which you could take home, plug in, and start using straight away. Some hopes!

What I had needed was a word processor. Eventually I had chosen the A3010 because I knew that if I had bought a dedicated word processor I would soon have wanted graphics; the children wanted a computer; and the A3010 was bang up to date and appeared to offer an effective bridge between home use, school use and 'serious' computing - and it would operate through an ordinary TV.

For the first few weeks I was strongly tempted to dump the whole system back on Dixons' doorstep. I was going to take Acorn to the advertising standards people, the trading standards officer, and anyone else who might be interested in the fact that computer systems purchased off the shelf are not actually fit for the purpose intended. That is to say THEY DO NOT WORK (unless

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you already know a great deal about them, or are prepared to spend many hours, late nights and entire weekends trying to make sense of the instructions).

The hardest part was training the printer. It said somewhere that printing can be the most frustrating part of home computing. Too right! The manuals don't help - they just make it obvious that you are really pushing your luck expecting to get anywhere this side of (next) Christmas. You have to find solutions by trial and error. And after you have worked out the answer for yourself and gone back to the manual to gloat over the fact that it must have been talking a load of old boots, all of a sudden the answer is there, staring you in the face (as it was all along, of course).

You can't blame the fact that I bought the gear from Dixons (although I wouldn't go there next time, knowing what I do now).

I feel a bit better now. I have sent off for my upgrade to Impression II, and (wait for it) I can use Draw to the extent that I can achieve the same results as David Pilling in his article Special Effects Frames for DTP (RISC User 6:2) but in fewer steps (but I do wish he would explain where the Winding Rule got its name from).

Kevin Alder

Kevin Alder's letter (largely reproduced in full) illustrates the difficulties that newcomers to home computing too often encounter. It is salutary for all more experienced users to realise just how much the jargon of computing obscures the facts for new entrants. RISC User will certainly do all it can to help new users of Acorn's 32-bit range, as well as to support the more experienced and expert enthusiast (see also this month's editorial).

FLOPTICAL

Thanks for your article on floptical disc drives in RISC User 6:2. I have just received updated information from The Serial Port which tells me that their high density DOS discs can be read with a floptical drive. Although these discs cannot be read via the Emulator, you can at least copy the contents of these HD DOS discs to your hard disc via RISC OS.

Further, The Serial Port tells me that normal ADFS discs can be read, but will require a firmware change in the drive. The firmware is expected soon.

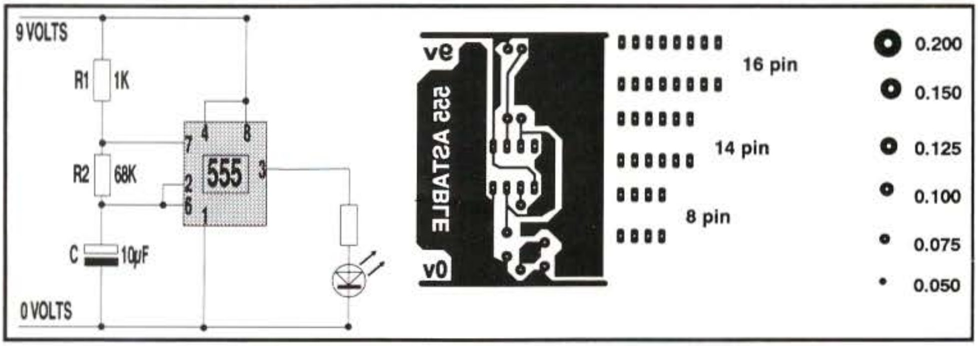
E.F.Lord

CIRCUIT DIAGRAMS WITH DRAW

Following the collection of Draw files of components for circuit diagrams in RISC User 6:2, I thought I'd send you an example of how I use Draw to produce artwork for PCBs. I have produced a collection of pads (see illustration) which can be easily linked to produce quite complex layouts. The grid should be set to inches (1 x 10) with the subdivision set to 20 (my preference). Zoom in to suit.

I've been printing to clear acetate, using a Computer Concepts' LBP8; everything works fine. Text should be flipped so that it reads correctly on the actual board. The large areas of black are to preserve the life of chemicals used in PCB production.

J.W.Behan



Sample circuit diagram and PCB layout from Mr Behan

C Notebook

Compiled and Linked by Lee Calcraft

DISAPPEARING MENUS

Tony Shew

If you use the RISC_OSLib function *dbox_fillin()* to handle your dialogue boxes, you will find that opening a dbox from a menu will close the menu even if the selection is made with the Adjust button. The only way to avoid this is not to use *dbox_fillin()* at all: use your own dedicated *dbox* handler instead.

MAKING SWI CALLS

Lee Calcraft

RISC_OSLib provides a number of useful functions for making SWI calls. Unfortunately these are all located in the *OS* file, whose use is 'deprecated' by Acorn. Acorn advise the use of functions in *kernel* instead, but this file does not contain equivalents of the easy-to-use *os_swi_rn()* set of functions.

Here is a non 'deprecated' replacement for os_swi3r(). It takes 4 parameters: the SWI number, and three pointers to int. These convey the values for R0, R1 and R2, both before and after the call. The function returns a pointer to os_error. This will be null if no error occurred, and only in such cases will r0, r1 and r2 contain valid exit data.

```
#include "kernel.h"
os_error *swi_3(int swi_no,int *r0,int
                              *r1,int *r2)
{
  _kernel_swi_regs r;
  os_error *e;

  r.r[0]=*r0;
  r.r[1]=*r1;
  r.r[2]=*r2;
  if ((e=_kernel_swi(swi_no,&r,&r))==0)
  {
    *r0=r.r[0];
    *r1=r.r[1];
    *r2=r.r[2];
  }
  return e;
}
```

DeskEdit USER COMMANDS

Tony Shew

With reference to the recent feature on Tiny Obey Files, here is one that I run from the DeskEdit User Commands submenu. The Obey file is called *OpenCLibs*:

```
Filer_OpenDir ADFS::HD4.$.DDE.CLib.o
Filer_OpenDir
          ADFS::HD4.$.DDE.RISC_OSLib.o
```

This opens directory viewers for the C libraries so they can be dragged to the *Make* window when creating a new *Make* file.

COUNTRY-CUSTOMISED RESOURCES

David Spencer

The *res* suite of functions in RISC_OSLib allows you to manage application resource files. There is an undocumented feature of the function *res_open()* which facilitates country customisation. When you supply a filename to *res_open()* the function looks first for a file with the current country number as its final character. If this is not found it looks for the name specified. Thus if you call:

```
res_open("MySprites","r");
```

an attempt will first be made to open the file *MySprites1*, assuming that the current country number is *1* (UK).

RETURNING POINTERS TO THIN AIR

Lee Calcraft

If you are writing a function which returns a pointer of any kind, the variable or structure pointed to must *not* be local to the function itself. The lifetime of all such objects is the same as that of the function itself, and while the pointer you are returning remains valid, what it points to will have ceased to exist by the time that the function returns. The solution is to make the object *static*.

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All times are in seconds shown on the ARM3 and ARM2 based computers.

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	DeskJet 500	BJ-200	Speed increase factor
Time to get control back - ARM3	313	59	5.3
Last page completed - ARM3	316	200	1.6
Time to get control back - ARM2	832	155	5.4
Last page completed - ARM2	834	232	3.6

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? TECHNICAL QUERIES

Alan Wrigley answers more of your questions.

Q *Dear Sir*
Could you please explain what the arrows mean in the following line from a Basic program:

```
flags%=1<<22
```

J. Whetton

A A double arrow (or more precisely, angle bracket) indicates a logical shift of a 32-bit integer by the number of bits given after the arrows. In the case given above it signifies 1 shifted left by 22 bits, i.e. 1*2^22 or &400000. If the arrows were to point the other way, the shift would be to the right; thus &400000>>22 would equal 1. However, >> indicates a *signed* shift - in other words, the value which is placed in the most significant bit after the shift is a copy of that which was there previously, in order to preserve the sign. To effect an unsigned shift to the right, you must use >>> instead.

The main reason for using shifted values is when setting flags etc. It is much easier to set bit 22 of a flag word by ORing with 1<<22 (and much clearer to understand later) than to have to calculate the value as &400000.

Q *Dear Sir When I use RISC OS 3 applications such as Edit and Draw, the file icons in the save boxes move around with the pointer when dragged, but with my own programs all I get is the old boring dotted box. How do I make use of the new facility?*

J. Edwards

A The facility to drag a complete icon rather than a dotted box is controlled by a new module in RISC OS 3 called *DragASprite*. This has just two SWI calls. The first is *DragASprite_Start*, which you should call in place of *Wimp_DragBox* when initiating a drag. Full details of this are given in the RISC OS 3 PRM, but to use it in the simplest way you can specify the following parameters: R0 holds a set of flags - a value of 133 will centre the sprite in the drag box, set the whole screen as the bounding box for the drag, and add a drop shadow to the sprite when dragged. To remove the shadow, set the flags to 5 instead. R1 points to the sprite area containing the sprite (1 for the Wimp pool); R2 points to the sprite name; and R3 points to a 16-byte block giving the starting co-ordinates of the drag box (exactly as supplied to *Wimp_DragBox* in block+8 to block+20).

The second SWI is *DragASprite_Stop*. This is called when you receive a *User_Drag_Box* poll reason code and removes the sprite from the screen. It takes no parameters. This SWI is called in addition to any code you need for processing the finished drag, of course.

Q *Dear Sir Is there any way that RISC OS can be set to overtype mode for text entry in dialogue boxes?*

P.B. Hutchinson

A The Wimp always adopts insert mode when input from the keyboard is entered into a writable icon, and there is no way to alter this. However, it is possible to simulate overtype mode if you are able to write your own programs and are prepared to take some of the decoding of the input off the Wimp's shoulders. By giving the icon a validation string which effectively disallows all characters, any key pressed (with a few exceptions under RISC OS 2 which I will mention later) will be returned to the application via a Wimp poll *Key_Pressed* event (reason code 8) instead of being processed automatically. You can then use this to replace the existing character at the caret position with the one typed in and redraw the icon, thus effectively implementing overtype mode. The validation string should therefore be simply "A".

When a *Key_Pressed* event is received, you should first read the window handle at block+0 and the icon handle at block+4 to see which icon to update. The following code, for example, will ensure that the character entered replaces an existing one rather than being inserted:

```
  whandle%=!block%:ihandle%=block%!4
  key%=block%!24:offset%=block%!20
  SYS "Wimp_GetIconState",,block%
  ptr%=block%!28+offset%
  IF ?ptr%<32 ?ptr%=key%:ptr%?1=13 ELSE
?ptr%=key%
  block%!8=0:block%!12=0
  SYS "Wimp_SetIconState",,block%
  SYS "Wimp_SetCaretPosition",whandle%,
ihandle%,,,-1,offset%+1
```

The second line gets the ASCII code of the key pressed from block+24, and the position of the caret in the icon from block+20. The window and icon handles are already in the block ready for the call to *Wimp_GetIconState*. The line beginning *IF ?ptr%<32* ensures that if the character at the caret position is less than 32 (i.e. a control character and therefore the current end of the string), the character entered is added to the string rather than replacing one already there.

The keys which cannot be intercepted under RISC OS 2 are the left and right cursor and the Copy keys (with or without Shift or Ctrl), Delete, and Ctrl-U. This is not a problem since you would normally want these to carry out their usual function anyway. Under RISC OS 3 you can ask to be notified about *all* key presses.

There is one problem with this method. If the icon's indirected buffer is full, the Wimp ignores keypresses. This means that if the string is already at its maximum length the routine listed above will fail to work. The only solution I can think of to this is to make the buffer one byte longer than necessary and to ignore the keypress if *offset%* is greater than the required length.

Q *Dear Sir*

I am trying to write a program which creates a sprite of a specified size. How do I calculate how large the sprite area must be to hold it, in such a way that the program is mode-independent?

Tom Hardman

A A sprite area requires 16 bytes for the area control block, plus 44 bytes for each sprite control block (assuming no palette is stored), plus the sprite itself, the size of which will depend on the number of bits per pixel in the chosen mode. The latter value can be found by using the SWI *OS_ReadModeVariable*, but the value returned is the log to base 2 of the required figure. To read the value for the current mode and convert it to the true bits-per-pixel value you would use:

```
SYS "OS_ReadModeVariable",-1,9 TO ,,bpp%
bpp%=2^bpp%
```

The value of -1 passed in R0 indicates the current mode.

This is not quite the end of the story, since a stored sprite often has wastage at either end of each row of pixels where the end of the row is not word-aligned. Since this may be up to 3 bytes at either end, it is safest to allow an extra 6 bytes per row. The sprite area will therefore be no more than the following size:

```
60+6*ysize%+xsize%*ysize%*bpp%/8
```

where *xsize%* and *ysize%* are the horizontal and vertical sizes, respectively, of the sprite in pixels. If you have used the calculation given above for *bpp%*, this will be the correct size for the current mode.

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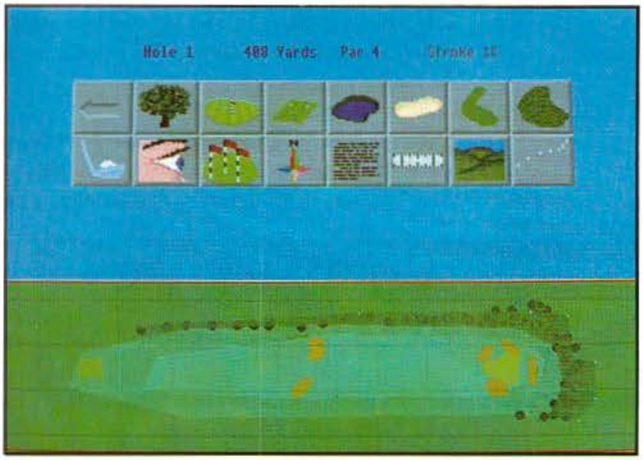
Can Computer Games Educate?

Chris Drage concludes his exploration of the educational merits of game playing with reference to secondary education.

SECONDARY

Many of the best games at this level are actually simulation programs where the differences between play and work are typically blurred. *Microdrive World Edition* (C.I.S.) is among the best computer golf simulations, but *Microdrive Designer* adds a whole new dimension to this excellent game. We are always being told that the school computer should actively adopt a design role and here's one very good opportunity. Given a comprehensive selection of design features (e.g. 48 different types of green) each hole can be built up in plan view by selecting objects and dragging. It can be measured, edited and altered until the desired effect is achieved. There is even a wide 'library' of flora which should be selected according to the proposed 'climate' of the area. The program simply begs group participation where each group is responsible for designing a hole, following agreement on the overall course plan. A valuable exercise would be to try and 'improve' an existing local course. Now that would be a challenge!

Turcan Research Systems produces some of the most comprehensive historical simulation games for the Arc, among which are *Dreadnoughts* and *Waterloo*. These games provide the opportunity to illustrate differences between strategy and tactics. Taking Dreadnoughts as an example, the program traces major sea engagements over 50 years during this century involving British battleships. Within each of the various scenarios the player takes the role of commander and must make judgements and decisions relating to the engagement of the battlefleet based on communications received from the fleet. Employing excellent graphics and sound effects, there is amazing attention to detail which takes the simulation to new levels of realism. To succeed, you need to have tactical information, which requires some background reading. Such complex games are suitable for secondary pupils, providing that a good deal of pre-computer preparation takes place. The children must certainly be familiar with the program, its techniques and capabilities before embarking on the game. They are a must for the history department.



Microdrive Designer

STRATEGY GAMES

Computer games which offer no direct subject links can still provide most or all of those aspects of the curriculum so important for today's youngsters. In addition, children quickly discover the value of keeping records of their strategies and moves on paper when tackling such tasks. Two classic strategy games for the Archimedes series must be *Repton 3* (Superior Software) and *Lemmings* (Krysalis). In their separate ways both programs are truly delightful and don't possess any of the violent overtones usually associated with arcade style games; on the contrary, with Lemmings the aim is to save as many as possible! Developing strategies is the only way to solve each of these multilevel games. Look out for *Repton 4* and *Oh No! More Lemmings*, each of which offers variations on the original theme.

No discussion about games would be complete without mentioning that most popular of games, chess. Undoubtedly the most comprehensive chess program on the Arc is *Cyber Chess* (Fourth Dimension) and this is not just because of its inherent playing strength, but rather because it makes no assumptions that its human opponent can actually play! There is a tutorial mode with on-screen hints, analysis and advice which when used with the accompanying tutorial book is an excellent means of learning the rules, 'book' moves and alternative strategies. Being fully RISC OS compliant, several on-screen game windows enable variations of moves to be studied concurrently.

Such games offer children one particular advantage: as the opponent is a very patient non-human, a group of children can quite happily challenge it. It is because these games promote group problem-solving situations that computer games are of value encouraging co-operation and teamwork.

CONCLUSION

The role of play in computer software is a vital element in ensuring that children make decisions and solve problems as well as discovering and practicing fundamental thinking skills. Computer software cannot fulfil all requirements: the crucial point is to ensure that children be given ample opportunity to transfer their learning from one curriculum area to another. The more that thinking skills etc. are practised in as many different situations as possible, the more likely it is that they will be remembered and consciously used in real life situations away from the classroom.

Chris Drage will be back again next issue with another feature on education and computing.

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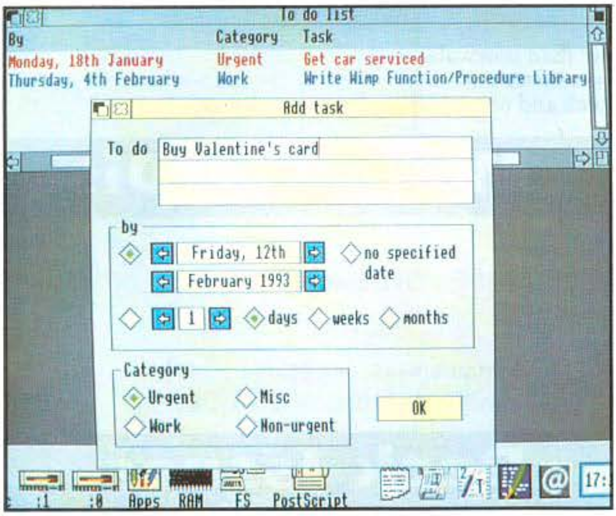
Harry Organiser

by Andrew Cumming



By	Category	Task
Monday, 18th January	Urgent	Get car serviced
Thursday, 4th February	Work	Write Wimp Function/Procedure Library

To do: Buy Valentine's card

by

◆ Friday, 12th February 1993 ◇ no specified date

◇ 1 ◆ days ◇ weeks ◇ months

Category

◆ Urgent ◇ Misc

◇ Work ◇ Non-urgent

Harry is a RISC OS compliant "to-do list" manager. It allows you to maintain a list of tasks which must be completed by specified dates. Tasks may be placed into one of four user-defined categories. The application can also behave in a similar way to Acorn's Alarm, warning you as the completion date for a particular task draws near.

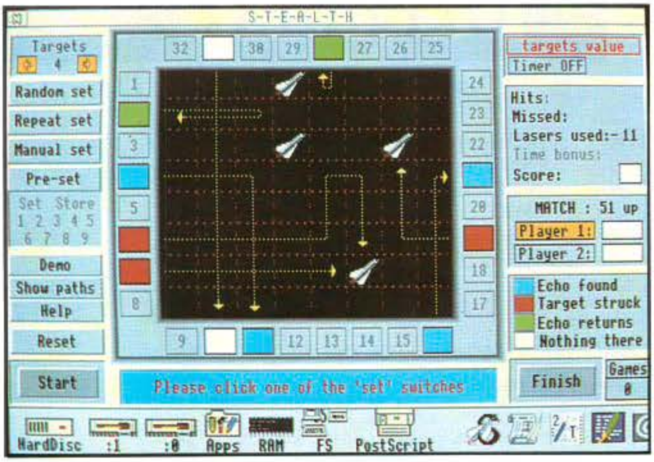
Tasks can be classed as "done" and "not done", and can be deferred to a later date (perfect for procrastination!). Tasks which are "Done" can then be removed to keep the list as small as possible. The task list can easily be saved as a text file, enabling it to be printed out via a text editor.

Adding tasks couldn't be simpler: you just call up the dialogue box, type in up to three lines of text, decide on a deadline (if there is one), and choose a category for the task. The task is then added to the window, displayed in a colour according to its category. The categories and colours can be user-defined, along with a number of options to tailor the system to personal use.

Now you have no excuse for forgetting to do things!

The Game of Stealth

by Patrick Dowling



Hits:
Missed:
Lasers used:- 11
Time bonus:
MATCH : 51 up

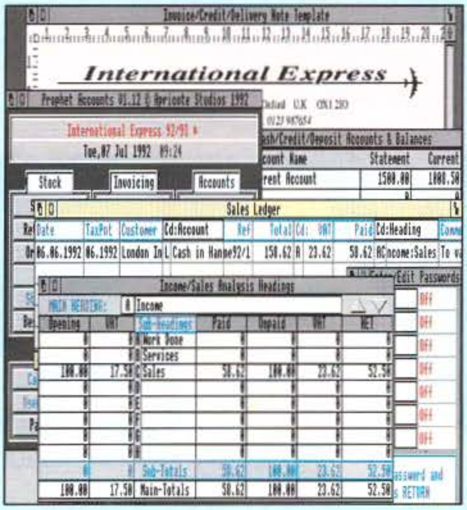
Please click one of the 'set' switches

The Game of Stealth is a game of logic and deduction in which you have to locate a number of hidden targets on an 8x8 grid. Targets can be detected by firing lasers into the grid from its perimeter, and deducing the positions of the targets from the results. For instance, if a laser is fired straight into a target, it is absorbed by the target, and if it hits the corner of a target, it is deflected at right angles. By seeing the results of firing into the grid, the targets can be identified.

All the action takes place in a window on the Desktop, and the application is fully RISC OS compliant. There are a lot of options, such as setting random positions for the targets or allowing one player to enter targets for detection by another. Different configurations of targets can be saved as pre-set games, and a high score table is included.

All-in-all this is a most challenging game with excellent Desktop graphics and many features to add variety.

For reasons of space, these applications are only available on this month's magazine disc.


Invoice/Credit/Delivery Note Template
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Prophet Accounts V1.12 © Apricote Studios 1992
International Express 92/93
Tue,07 Jul 1992 09:24
Stock
Invoicing
Accounts
Sales Ledger
Income/Sales Analysis Headings
Income
Work Done
Services
Sales
Sub-Totals
Main-Totals

Prophet

If you are still writing your accounts manually or are fed up with complicated double entry systems (and the jargon that goes with them) then **Prophet** is for you. At its simplest level, all you need do is type your income and payments directly into a fully editable window, ALL mistakes can be edited at any time and you don't lose your previous months data (unlike most other accounting packages). This means you can analyse your entries and produce reports whenever you want to and for any period. This is why it is used by so many book-keepers. **Prophet** is not only user friendly, it is also completely forgiving. It is not though, simply a cash book. It covers stock control, purchase orders, invoicing, statements, multiple bank accounts, standing orders, VAT, mail-merging and label printing with some of the best features ever seen. It can also calculate your profit/loss, balance sheet and tax liability and let you deal direct with the Inland Revenue (perfect for sole traders and partnerships who wish to reduce or cut out completely the cost of an accountant). It is also the only program to have had good reviews in all the magazines and the only program which offers **free telephone help and upgrades** - our service is simply the best. **Prophet** costs £170 + VAT and is available directly from us in the UK, or Winsley & Hall in New Zealand (tel:09 630 9691). Australian, Dutch and Canadian versions are also available. Overseas price: £180 inc. (no VAT).

Archive Magazine May 1992 - *if Acorn were to market a business package, Prophet would be the essential part.*
Risc User Magazine July 1992 - *Invoicing is a joy to use...anyone requiring an accounts package would do well to look at Prophet...it fulfils all my needs for now and the future.*
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(Prophet requires 2mb Ram)

Apricote Studios

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VISA
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RISC Developments' Software

Ovation
DESKTOP PUBLISHING

Ovation is the easy-to-use desktop publisher used on thousands of sites in education, home and business across the country. Now, in response to customer feedback, it has been enhanced with many new features, setting even higher standards of quality and value. Ovation is packed with professional features, yet remains easy-to-learn and instinctive to use. It provides a complete solution for all document generation; from simple single page letters to entire books with diagrams and scanned images.

Try before you buy!

A working demo is available for only £5 (inclusive), which is refundable against a future purchase of Ovation. This version has no Save or Spellcheck facilities. Please write or phone for our detailed Ovation brochure.

Price: **£99**
Members' Price: **£98.88**

Desktop Thesaurus
SYNONYM FINDER

Desktop Thesaurus is a superb companion for all desktop publishers and word processors. It has been recently expanded, and now contains over 17,250 keywords and nearly 182,000 carefully chosen alternative words. The synonyms for the required keyword are listed in a scrolling window according to parts of speech, so nouns, verbs etc. are grouped together. Clicking on any synonym itself then selects that word as a keyword and displays its synonyms allowing you to browse through the data looking for the ideal alternative word. When you have located an alternative word, it may be transferred instantly into almost any application for you. A special hotlink is provided with Ovation, but it is ideal for use with other packages such as Edit, Impression, Pipedream, 1st Word Plus etc.

Price: **£19**
Members' Price: **£18.98**

TypeStudio
FONT MANIPULATION

TypeStudio is a complete text manipulation package ideal for producing professional quality adverts, posters, banners, logos, letterheads etc. Drawing tools allow lines and curves to be drawn to create almost any shape, along which text can be flowed. Pairs of lines may be linked to create shapes into which text and Draw files may be moulded. A range of special effects are available, including: shadow, slant, 3D and mirror.

Features include:

- Flow text along straight and curved paths
- Mould text and Draw files to shapes
- Wall, floor and graduated shadows
- 3-D, mirror, slant and plinth effects
- Save in internal and Draw file format
- Print using RISC OS printer drivers
- Import Draw files as moulds
- Copy, rotate and magnify
- Grid and zoom facilities

The package includes 7 fonts and a 64-page user guide containing worked examples.

Price: **£45**
Members' Price: **£44.94**

HP500/550 & Star Drivers
PRINTER DRIVERS

The Printer DJ printer driver produces near laser quality output from the highly acclaimed Hewlett Packard DeskJet 500C and 550C colour printers. Both release 2 and release 3 drivers are supplied for each printer, each supporting 75 x 75, 150 x 150 and 300 x 300 print resolutions in monochrome, grey scale and full colour modes. PrinterLC is the approved printer driver for Star colour dot-matrix printers. It is suitable for both 9 and 24-pin printers including: LC24-200, LC-200, XB24-10 and LC-10. PrinterLC is a release 2 driver, supporting print resolutions from 60 x 72 dpi to 360 x 360 dpi depending on the printer model. Also suitable for many Epson and NEC colour printers.

Price: **£15** each
Members' Price: **£14.98**

RISC developments

RISC Developments Ltd.

117 Hatfield Road, St. Albans, Herts. AL1 4JS Tel. (0727) 40303 Fax. (0727) 860263

All Software is available from good dealers or direct from RISC Developments. Prices include VAT but please add carriage of £3.00 for Ovation and £2 for other software. Please write or phone for details of educational prices and site licences.

RISC Developments Software

Masterfile 3

DATABASE MANAGER

Masterfile version 3 is the latest development in the best selling family of database programs for Acorn systems. It is fast, simple to use and provides powerful data management facilities suitable for home, education and business use. Included amongst its many features is a very comprehensive indexing system allowing data to be accessed in any order. In addition, subsets may be created allowing access to just those records that match the search criteria. Both indices and subsets are updated automatically when records are added, modified or deleted. The report generator allows databases to be printed in card or spreadsheet form, and provides full label printing facilities. To trade-in an earlier version of Masterfile, please return your original disc to the address below, and deduct £5 inc VAT from the price. Only one trade-in allowed per order.

Price: **£49**
Members' Price: **£48.94**

Hard Disc Companion

HARD DISC BACKUP

Version II of Hard Disc Companion offers superior performance and efficiency. It has been completely re-written and is now twice as fast and even easier to use. It provides a structured approach to the backing up of hard drives, and the recovery of files in the event of disc failure or accidental file deletion. Both Full and Incremental backups are supported, and the files to be backed up or ignored may be specified using simple drag operations. The entire backup specification may be saved in a script file for use at a later date. Hard Disc Companion II uses an efficient compression system to backup as much data as possible onto the floppies without increasing the backup time. Separate applications are included to restore entire backups or just selected files.

Price: **£45**
Members' Price: **£44.94**

Hearsay

COMMUNICATIONS

Hearsay II is the most advanced communications package available for Acorn systems. It is multi-tasking and fully RISC OS compliant and is designed for easy communications for the first-time user, but with a wide range of advanced features making it the professionals choice. Hearsay is ideal for use with Prestel, Telecom Gold, Campus 2000 and Compuserve, and also provides very high quality VT320, VT102, VT52 and Tektronix 4105 Colour terminal emulations for direct connection to mini and mainframe hosts. In addition it gives access to Minitel systems such as the Teletel service and provides Xmodem, Ymodem, Zmodem and Kermit file transfer, a comprehensive script language, an auto-dial number directory and drivers for most popular modems. Please write of phone for detailed specification.

Price: **£75**
Members' Price: **£74.91**

PlayBack

MOUSE RECORDER

PlayBack allows recording in real-time of all mouse and keyboard operations as they are carried out. This new package will produce intriguing and eyecatching displays that will be of interest to home, education and business users as well as for training. It is an ideal tool for creating demonstrations or testing programs which run in the desktop. During desktop operation, all mouse operations and key presses may be recorded and saved to file. On playback everything will happen in exactly the same way, with the pointer following all the recorded movements, and text appearing on the screen as if typed from the keyboard. A synchronised text commentary maybe added, and recordings may be converted to ASCII format for editing. A play-only version is supplied which may be freely distributed with recordings.

Price: **£19**
Members' Price: **£18.98**

RISC developments

RISC Developments Ltd.

117 Hatfield Road, St. Albans, Herts. AL1 4JS Tel. (0727) 40303 Fax. (0727) 860263

All Software is available from good dealers or direct from RISC Developments. Prices include VAT but please add carriage of £3.00 for Hearsay and £2 for other software. Please write or phone for details of educational prices and site licences.

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